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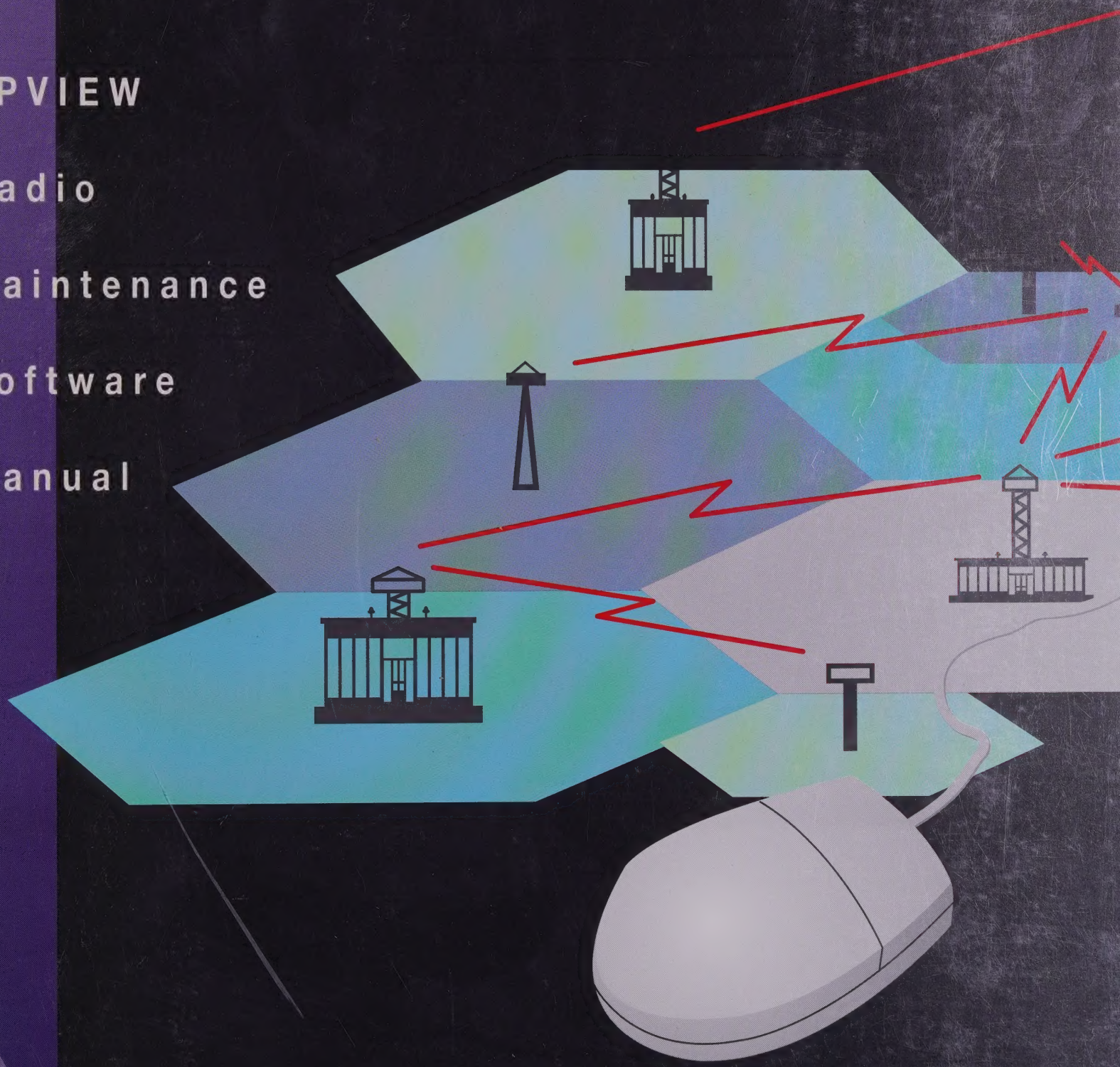
XPVIEW Radio Maintenance Software Manual



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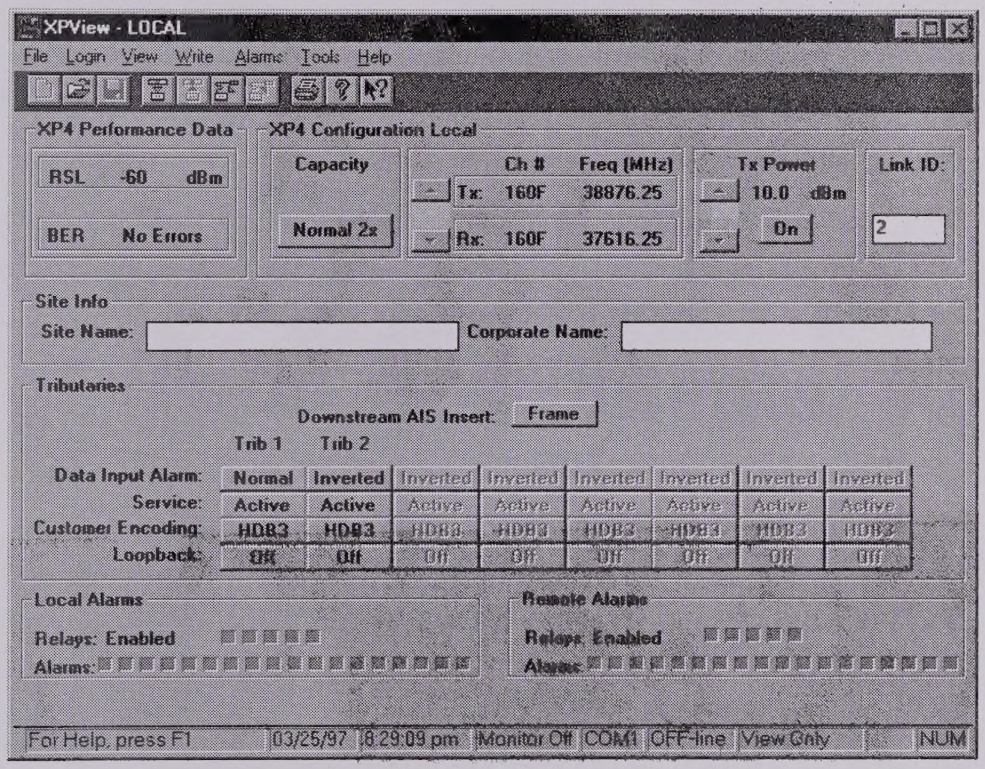
XPView User Guide



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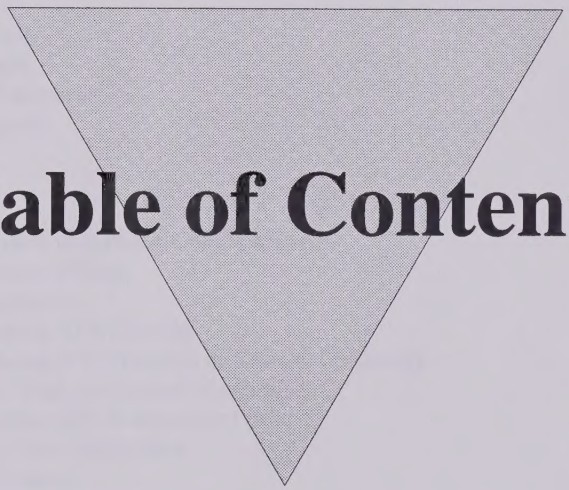

Table of Contents

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1. XPView Overview.

1.0 General.
1.1 XP4 Software Controllable Features.
1.2 Terms & Definitions.

2. XPView Installation.

2.1 General.
2.2 Hardware & Software Prerequisites.
2.3 XPView Installation Procedure.

3. XPView Startup.

3.1 Cable Connection between XPView & XP4.
3.2 Modem Connection between XPView & XP4.
3.3 Starting XPView.
    3.3.1 Modem Connect Procedure.
    3.3.2 Modem Disconnect Procedure.
3.4 XPView Login.
    3.4.1 Access Levels.
    3.4.2 How to Login.
    3.4.3 Changing Passwords.
    3.4.4 How to Logout.

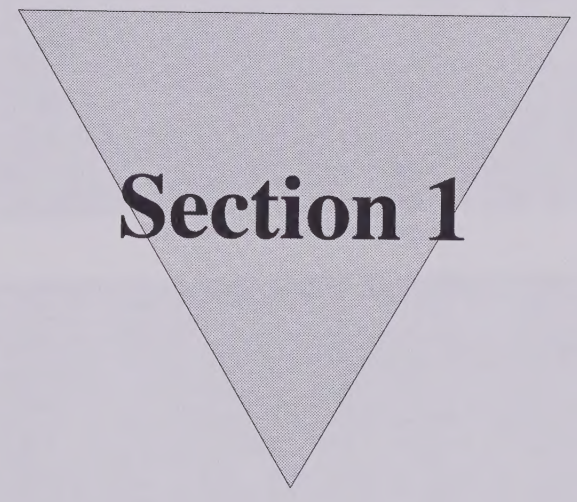
4. XPView Reference.

4.1 Main Screen Tour & How to Achieve Common Tasks.
    4.1.1 XP4 Performance Data.
    4.1.2 XP4 Configuration.
        4.1.2.1 Changing XP4 Capacity.
        4.1.2.2 Changing XP4 Transmit or Receive Frequency.
            4.1.2.2.1 Note on Channel Numbering.
        4.1.2.3 Changing XP4 Transmitter Power.
            4.1.2.3.1 Fine Adjustment.
            4.1.2.3.2 Mute.
        4.1.2.4 Changing XP4 Link ID.
    4.1.3 Site Info.
    4.1.4 Tributaries.
        4.1.4.1 Changing the AIS Insert.
        4.1.4.2 Changing the Tributary Data Input Alarm.
        4.1.4.3 Changing the Tributary Service.
        4.1.4.4 Changing the Customer Encoding.
        4.1.4.5 Changing the Tributary Loopback.
    4.1.5 Alarms.
        4.1.5.1 Alarm Configuration Dialog Box.
    4.1.6 Context Sensitive Help.
4.2 Title Bar.
4.3 Toolbar.
4.4 Status Bar.
4.5 Drop-Down Menus.
    4.5.1 File Menu Commands.
        4.5.1.1 File menu: Open.
        4.5.1.2 File menu: Save.
        4.5.1.3 File menu: Save As.

4.5.1.4 File menu: Print.
4.5.1.5 File menu: Print Preview.
4.5.1.6 File menu: Print Setup.
4.5.1.7 File menu: 1, 2, 3, 4 Command.
4.5.1.8 File menu: Exit.
4.5.2 Login Menu Commands.
4.5.2.1 Login menu: Login XP4.
4.5.2.2 Login menu: Logout.
4.5.2.3 Login menu: Edit Password.
4.5.2.4 Login menu: Front Panel Access.
4.5.3 View Menu Commands.
4.5.3.1 View menu: Local or Remote.
4.5.4 Write Menu Commands.
4.5.4.1 Write menu: Local or Remote.
4.5.5 Alarms Menu Commands.
4.5.5.1 Alarms menu: Local or Remote Configuration.
4.5.5.2 Alarms menu: File Configuration.
4.5.5.3 Alarms menu: View Monitor Log.
4.5.5.4 Alarms menu: Edit Monitor List.
4.5.6 Tools Menu Commands.
4.5.6.1 Tools menu: Radio Frequency Plans.
4.5.6.1.1 Editing a Radio Frequency Plan.
4.5.6.1.2 Adding a Radio Frequency Plan.
4.5.6.1.3 Deleting a Radio Frequency Plan.
4.5.6.1.4 Saving a file of Radio Frequency Plans.
4.5.6.1.5 Opening a file of Radio Frequency Plans.
4.5.6.2 Tools menu: Code Download.
4.5.6.3 Tools menu: Active Software.
4.5.6.4 Tools menu: Diagnostic Tools.
4.5.6.5 Tools menu: Modem.
4.5.6.6 Tools menu: Read IDU Parameters.
4.5.6.7 Tools menu: Read ODU Parameters.
4.5.6.8 Tools menu: Toolbar.
4.5.6.9 Tools menu: Statusbar.
4.5.7 Help Menu Commands.
4.5.7.1 Help menu: Index.
4.5.7.2 Help menu: Using Help.
4.5.7.3 Help menu: About XPView.

5. Appendices.

5.1 Sample Configuration File Reports.
5.1.1 System Report.
5.1.2 Alarm Configuration.
5.1.3 Radio Frequency Plan.
5.1.4 Terminal Configuration Blank Report.
5.2 Sample Monitor Log Report.



Section 1

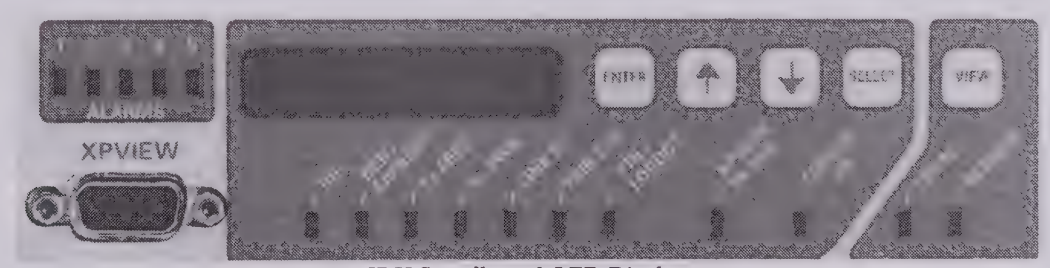
1.0 XPView Overview

1.1 General

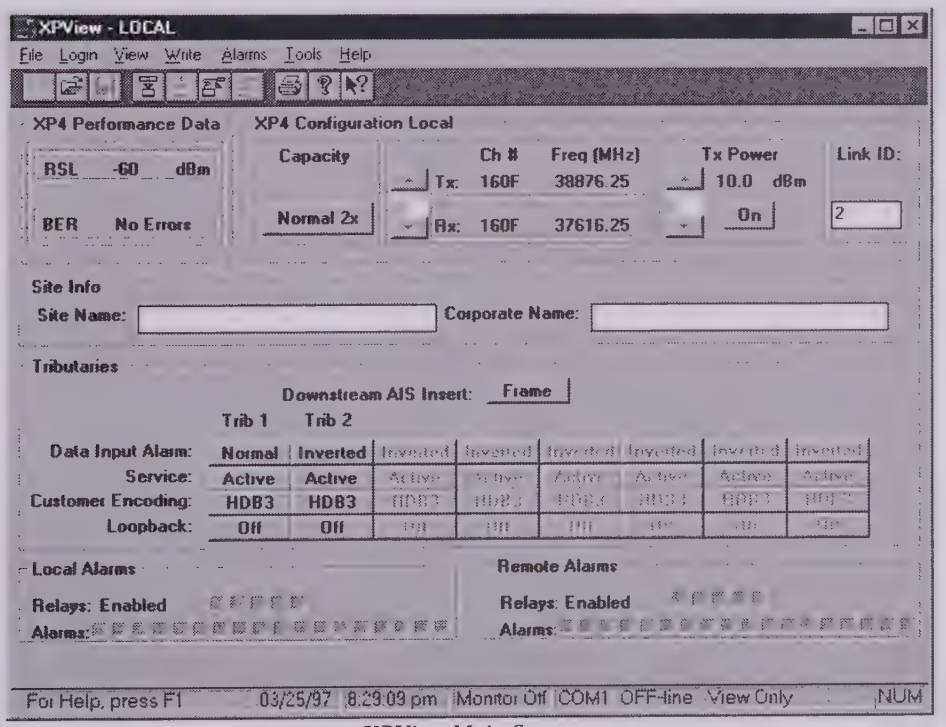
The XP4 product range is based on full software control and system configuration without the need for any hardware switches or factory installed options. Utilization of the software based features may be achieved via the 7 character LED display and keypad on each IDU, or via the IDU front panel mounted DB9 XPView connector using an EIA RS232 interface to a standard IBM compatible PC running Innova's XPView software.

The IDU LED display & keypad is useful for simple on-site configuration of a link, but is limited in functionality to only those features required to facilitate installation.

The XPView software functions include all commands to configure a terminal, to configure the alarms and to monitor performance. The complete configuration of both the local and remote terminals can be displayed and changed from one end of the link. In addition to transmit/receive frequencies, software selectable features include transmit power level, link ID code, receive level/BER alarm points, RF loopback, ODU loopbacks & remote/local tributary loopbacks.



IDU Speedkeys & LED Displays



XPView Main Screen

1.2 XP4 Software Controllable Features

The following list contrasts key features of the XP4 available via software & whether they are accessible using XPView or the IDU Speedkeys.
Features accessible are for both local & remote XP4s unless marked *.

Feature	Accessible via XPView	Accessible via IDU Speedkeys
RSL	✓	✓
BER	✓	✓
Capacity	✓	✓
Transmitter Output Power / Mute	✓	✓
Frequency/Channel	✓	✓
Link ID	✓	✓
Tributary Alarm Inversion	✓	✓
Tributary Line Coding (T1 only)	✓	✓
Tributary In-Service Status	✓	
Site Name	✓	
Corporate Name	✓	
AIS Insertion Conditions	✓	
Relay Configuration	✓	
Password Configurations	✓	
XP4 IDU Front Panel Enabling	✓	
Monitor Log Enabling	✓	
Software Downloading	✓	
Frequency Plan Editing	✓	
RF Loopback *	✓	
ODU Loopbacks *	✓	
Tributary Loopbacks	✓	
FEC Enabling *	✓	
Modulation Enabling *	✓	
Scrambler/Descrambler Enabling*	✓	

1.3 Terms & Definitions

IDU
The indoor unit (IDU) presents all customer interfaces & performs all multiplexing/management functions in a XP4 radio terminal.

ODU
The outdoor unit (ODU) performs all modulation/demodulation & RF signal processing functions in a XP4 radio terminal.

Local
An IDU/ODU pair is termed "local" when a physical connection is established to it through the IDUs XPView port via a cable or modem.

Remote
The IDU/ODU pair which communicates with the local XP4 terminal is termed "remote."

Radio or Terminal
The term "radio" or "terminal" refers to an IDU, ODU and antenna connected together at the same location.

Link
A "link" is a pair of XP4 radio terminals communicating with each other via RF signals.

Main Screen
The main window displayed by XPView on a operator's PC.

"E" format radio
A radio presenting its data channels in bit rates of N x 2.048Mb/s ($2 \leq N \leq 8$).

"T" format radio
A radio presenting its data channels in bit rates of N x 1.544Mb/s ($2 \leq N \leq 8$).

Section 2

2.0 XPView Installation

2.1 General

XPView is a 16 bit windows program which runs on MS-Windows 3.11 and MS-Windows 95. At present, the MS-Windows NT platform is not supported. XPView interfaces with the radio through a cable which is directly connected or connected through a modem from the PC to the radio's IDU.

XPView has a main window which can display either parameters read from the local radio or parameters read from the remote radio. There are other windows called dialogs which are displayed by selecting the appropriate menu items from the menu. The parameters displayed on the main window of XPView are updated by the radio in real time. XPView also indicates the health of the link if a failure occurs in real time. For example, if the remote radio loses power, then XPView will display a message ***"No Remote RADIO"*** on the front screen.

A user can communicate with the radio through XPView at three access levels. The levels are level 1, level 2, and level 3. Level 1 does not require a password and a user can only view the parameters of the radio. Levels 2 and 3 require a password which is unique to each level. In level 2 and 3, a user can read and write parameters from and to the radio. Level 3 has more features available than level 2 such as ability to download code, ability to make a software version active, and diagnostic tools for trouble shooting.

2.2 Hardware & Software Prerequisites

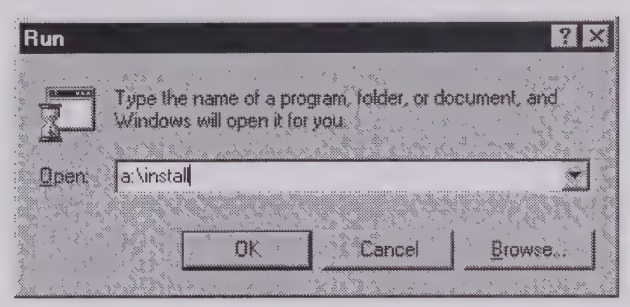
XPView requires the following minimum configuration:

- An IBM compatible PC.
- Microsoft Windows Operating System capable of supporting 16-bit applications; 3.1x or 95.
- At least 1.2Mb of available hard-disk-drive space.
- 4Mb of available memory (pref. 8Mb or above).
- A VGA color monitor is recommended.
- A 386 or higher processor.
- A 1.44Mb, 3.5-inch disk drive.
- One available serial port.
- A mouse (or other pointing device) is recommended. If no mouse is available, use the Tab key to move around the screen and the Alt key to access menus.

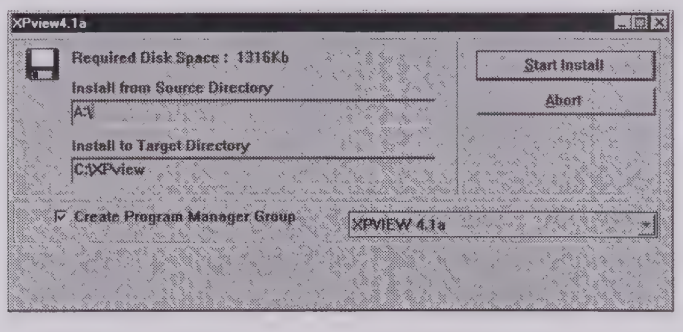
2.3 XPView Installation Procedure

To install XPView on the target PCs hard disk drive follow the instructions below.

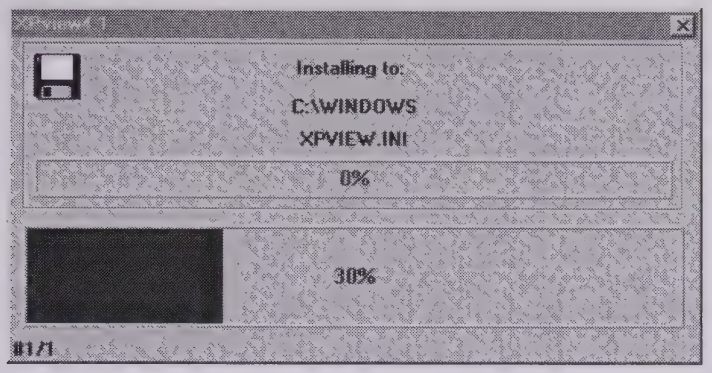
1. Ensure PC is powered up & Windows is running.
2. Insert the XPView Installation Disk into the PC's 3.5-inch disk drive.
3. Run the file INSTALL.EXE on the floppy drive:
   - Using Windows 3.1x.
     From the Program Manager File menu, choose Run option & enter **A:\INSTALL** (if disk is in A: drive) or **B:\INSTALL** (if disk is in B: drive).
   - Using Windows 95.
     From the Start menu, choose Run option & enter **A:\INSTALL** (if disk is in A: drive) or **B:\INSTALL** (if disk is in B: drive).



4. Chose **OK** to continue & the following dialog box will be displayed:

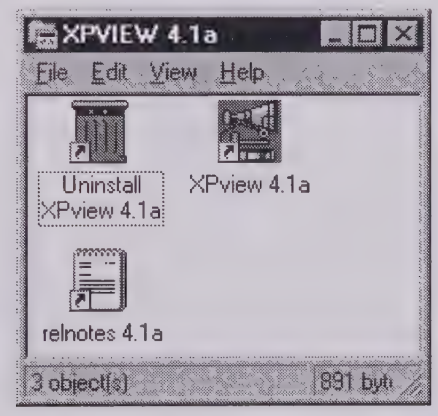


5. If there is no requirement for the Install program to create a Program Manager Group for XPView, uncheck the box next to **Create Program Manager Group**.
   If an existing Program Group is to be used, the operator can use the pull-down selector on the right side of the Install dialog box to select a group where the icon for the XPView program will be placed.
6. The **Target Directory** is where XPView will be installed. The default is C:\XPVIEW. Type in the directory location if an alternate is required.
   Select **Start Install** to install XPView to the target directory.
7. The Install program will begin copying files.



8. When installation is complete, the following dialog box will be displayed. Select **OK** to return to the Program Manager/Desktop window.

9. A new Program Group is created if the **Create Program Manager Group** box was checked on the install dialog box (step 5). Windows 95 users can drag the XPView icon from the new Program Group onto their desktop to provide an immediately accessible shortcut if required.



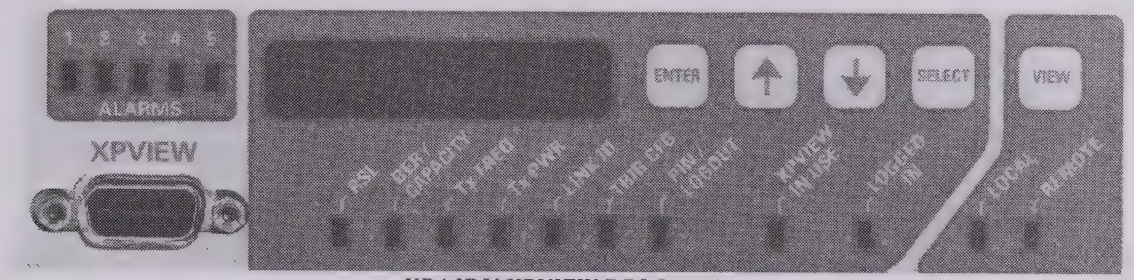
XPView software installation is now complete.
Proceed to Section 3 for help on running XPView & connecting to a XP4 radio.

Section 3

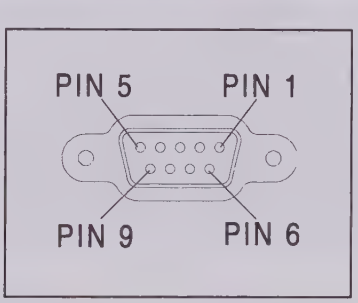
3.0 XPView Startup

3.1 Cable Connection between XPView & XP4

A serial cable connection is required to connect the PC running XPView to the XP4 radio.
The connection point at the PC end of the cable is a serial port, i.e. COM 1, 2, 3 or 4. This is usually presented on a male DB9 connector.
The connection point at the XP4 radio end of the cable is the IDUs XPVIEW port; a female DB9 port. Pinout details are given below.



XP4 IDU XPVIEW DB9 Location



XPVIEW Port DB9 Pin Numbering

Pin No.	Signal Name	Signal Description
1	-	
2	RX	Receive Data Signal (I/P)
3	TX	Transmit Data Signal (O/P)
4	-	
5	GND	Ground
6	-	
7	-	
8	-	
9	-	

XPVIEW Port DB9 Pinout

The communications protocol between the PC & the IDU is proprietary to Innova.
Signal levels of the serial bit stream between the PC & the IDU are per EIA RS232.
The PC COM port settings are as detailed below:

- 9600 baud,
- no parity,
- 8 data bits,
- 1 stop bit.

3.2 Modem Connection between XPView & XP4

An external modem can be connected to the IDU instead of a PC. This enables an operator to communicate with the XP4 link from a central operations center or from any location where PSTN access is available. The modems on the both ends of the dial-up connection must be compatible with each other. The modem located at the XP4 location must be set up in auto-answer mode.

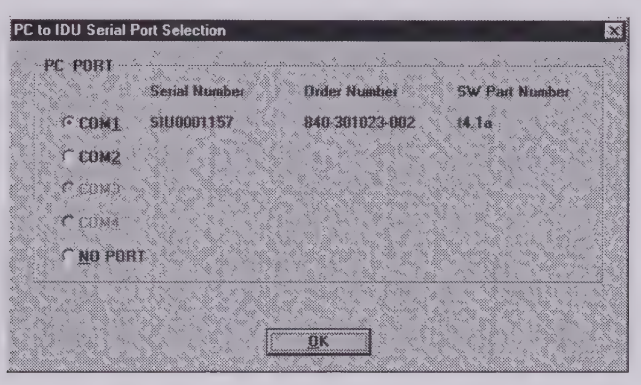
XPView startup procedure is slightly different to that used when connecting via cable to the XP4. Refer to section 3.3.1 for details.

3.3 Starting XPView

1. Run the XPView application.
   Using Windows 3.1x.
   - From the Program Manager window, find the Program Group containing XPView.
   - Select the XPView icon in the Program Group & double-click it with the mouse or press ENTER key.

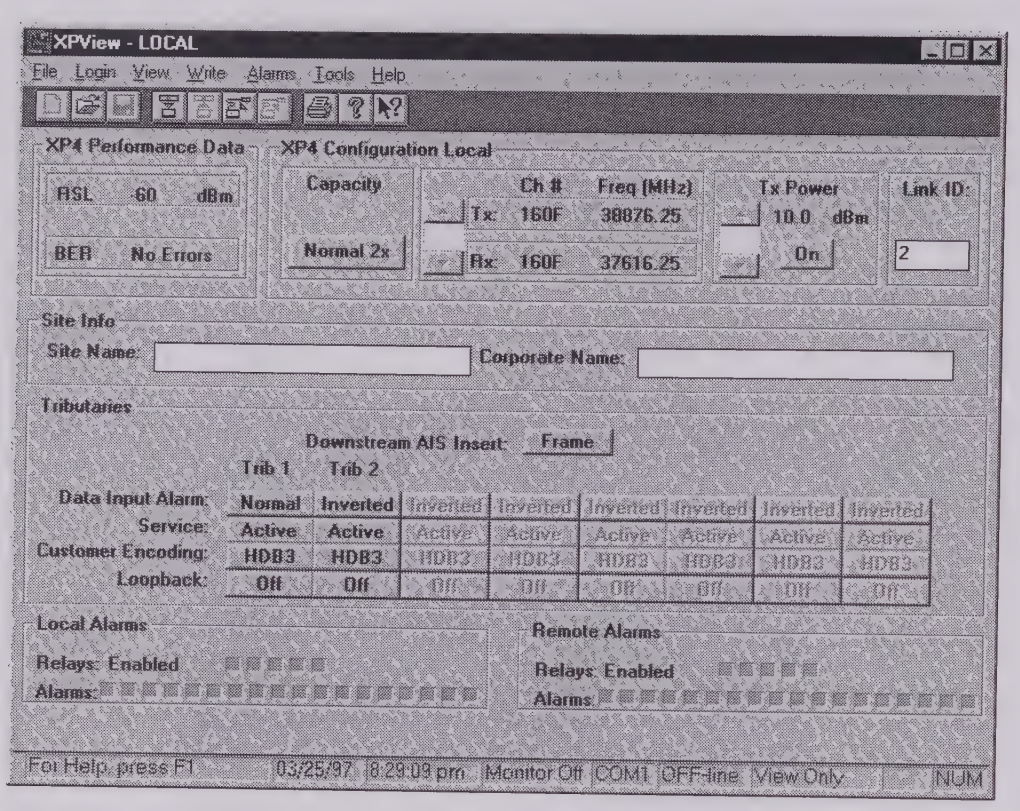
   Using Windows 95.
   - From the Start menu, choose Programs option.
   - Select the XPView menu item & choose the XPView program.

2. The following dialog box will appear.
   This dialog box is used to select the communications port that will connect XPView to the XP4. Unavailable ports are dimmed. The user can list the unavailable ports in the **xpview.ini** file under [Skip ComPort], see notes to step 3.



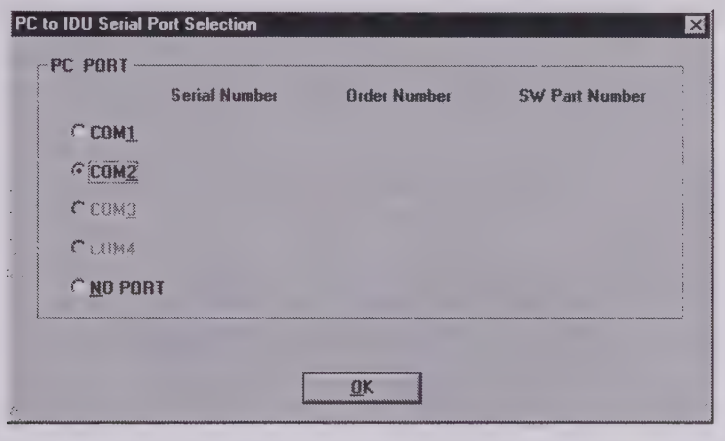
3. Select the relevant PC COM port & **OK**.
   It is important to make the correct physical connection since the user will have to exit and restart XPView if the incorrect COM port is selected.
   Notes.
   - On start-up, XPView attempts to send a message to each COM port to see if an IDU is attached. Certain programs and/or devices could be affected by this message if the *system.ini* file specifies a driver that is not **comm.drv = comm.drv**. XPView will display a warning message if the statement **comm.drv = comm.drv** is not in the [boot] section of the *system.ini* file.
     If the operator does not want XPView to send these messages to a specific COM port, add the following section to the *xpview.ini* file (usually found in the Windows directory on the PCs hard-disk-drive):
     [Skip ComPort]
     ComPort=
     After the equals sign (=), put the port(s) to skip. Use commas or spaces as delimiters between port numbers.
     Addition of these lines to *xpview.ini* will cause XPView to skip the COM port(s) specified.
     For example, to skip comports 1 and 4, the **[Skip ComPort]** section of *xpview.ini* would read:
     ComPort = 1, 4 or **ComPort = 1 4**
   - When a COM port is selected, XPView uses the following communications settings:
     - 9600 baud,
     - no parity,
     - 8 data bits,
     - 1 stop bit.

4. The XPView main screen will appear.
   Note that operator login is required prior to XP4 reconfiguration.

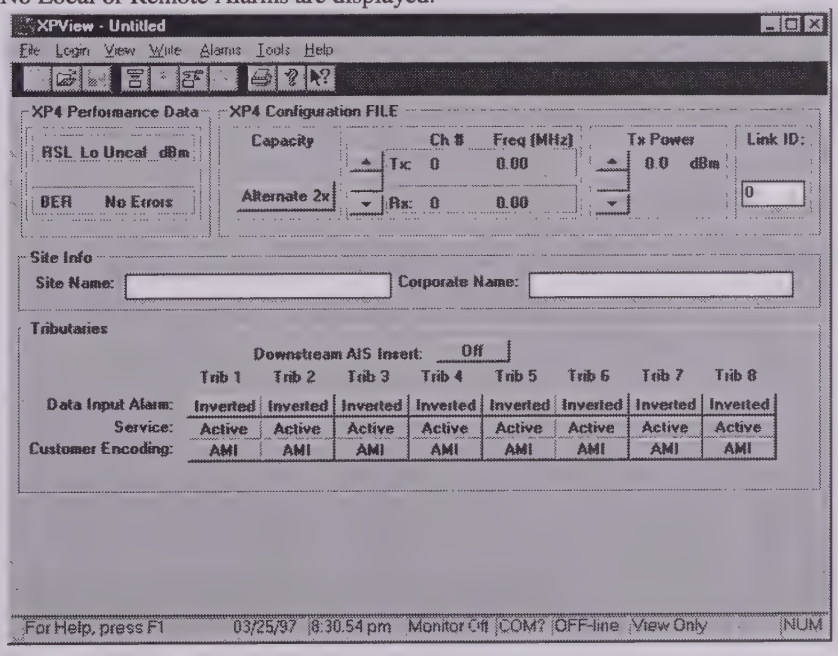


3.3.1 Modem Connect Procedure

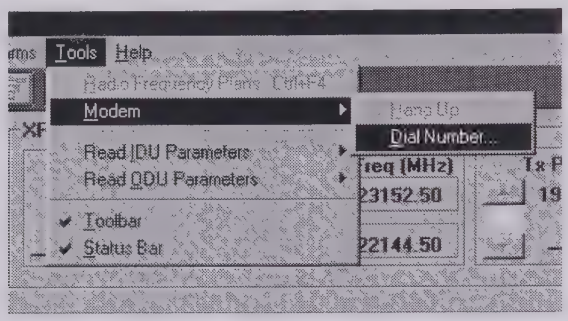
1. Ensure PC's modem is connected to a telephone line.
2. Note the COM port assignment of the modem on the PC.
3. Run XPView application in the same manner as if a cable connection was being used (step 1 in section 3.3). Note that the PC COM Port dialog box will not recognize any connected XP4.
4. Select the PC COM port associated with the modem.



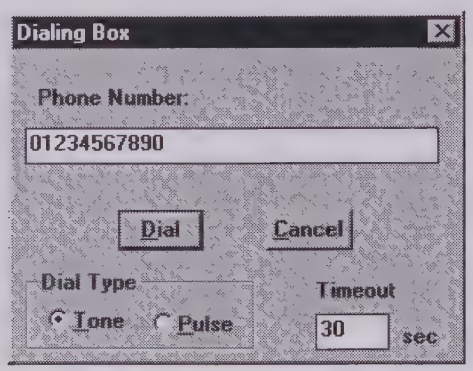
5. Note the features of the XPView main screen that appears when no XP4 is detected:
   - Title bar displays **Untitled** instead of **Local**,
   - Toolbar is blue color,
   - XP4 Performance Data section in main window displays **No Local IDU**,
   - No data is displayed in Ch #, Freq, Tx Power, Link ID, Site Name & Corporate Name fields,
   - Default data is displayed in Capacity, AIS Insert, Data Input Alarm, Service & Customer Encoding fields,
   - No Tributary Loopback buttons are displayed,
   - No Local or Remote Alarms are displayed.



6. Select the menu item **Dial Number** from the menu item **Modem** under the **Tools** menu.



7. Enter the phone number in the box. Note that this dialog box will not appear if a modem is not detected. If this happens, close down XPView & re-confirm the PC COM port assignment of the modem.



8. Change the Dial Type. Click on **Tone** or **Pulse**. The default is **Tone.**
9. Click in the box to change the **Time-Out** (if necessary). The default is **30 seconds.**
10. Click on the **Dial** button
11. A status box shows the dialing progress. The IDU on the other end can be accessed after the message **"Connect 9600"**.

Note. Communication response times are much slower while using a modem.

3.3.2 Modem Disconnect Procedure

Select **Hang Up** from the menu item **Modem**. It may take up to 6 seconds to disconnect.

3.4 XPView Login

3.4.1 Access Levels

Three levels of operator are supported by XPView;

- Level 1 (***View Only***).
  View XP4 data only.
- Level 2 (***Maintenance***).
  View XP4 data, write data to XP4.
- Level 3 (***Administration***).
  View XP4 data, write data to XP4, change or delete Radio Frequency Plans, code download, RF, ODU & IDU aggregate loopbacks, access diagnostic tools.

On XPView start-up, the operator has Level 1 privileges, i.e. ***View Only***.
Levels 2 & 3 are accessed via unique passwords.

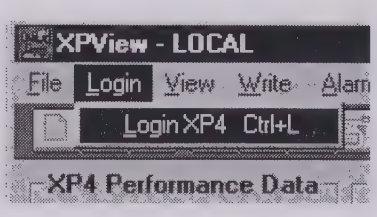
A tabular contrast of the features accessible at each different XPView login level is given below:

Feature	Level 1	Level 2	Level 3
RSL	View Only	View Only	View Only
BER	View Only	View Only	View Only
Capacity	View Only	✓	✓
Transmitter Power Fine Adjust	View Only	✓	✓
Transmitter Power Mute	View Only	✓	✓
Frequency/Channel Change	View Only	✓	✓
Link ID	View Only	✓	✓
Site Name	View Only	✓	✓
Corporate Name	View Only	✓	✓
AIS Insert	View Only	✓	✓
Tributary Data Input Alarm	View Only	✓	✓
Tributary In-Service	View Only	✓	✓
Tributary Encoding	View Only	✓	✓
Tributary Loopback	View Only	✓	✓
Alarms (View)	✓	✓	✓
Alarms (Configure)		✓	✓
File Opening from disk	✓	✓	✓
File Saving to disk		✓	✓
Report Printing	✓	✓	✓
Edit Passwords		✓	✓
Front Panel Access Restrictions			✓
View Monitor Log	✓	✓	✓
Edit Monitor List/Start Monitoring		✓	✓
Radio Frequency Plan editing	File Only	File Only	✓
Code Download			✓
Active Software			✓
RF, ODU & IDU Loopbacks			✓
Modulation ON/OFF			✓
Scrambling ON/OFF			✓
Connecting to XP4 using Modem	✓	✓	✓
Read IDU & ODU parameters	✓	✓	✓
Toolbar activation	✓	✓	✓
Status Bar activation	✓	✓	✓
Help	✓	✓	✓

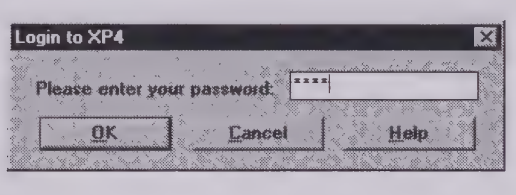
Logging in gives identical level access to both XP4 terminals, local & remote, in a working link.

3.4.2 How to Login

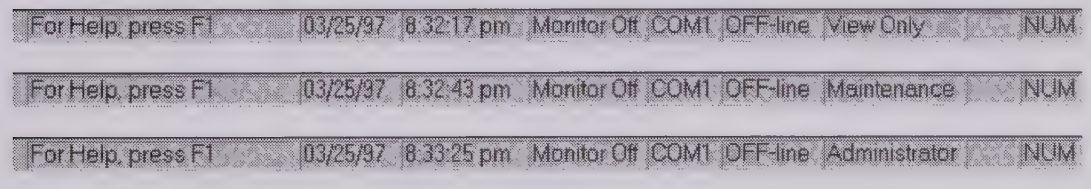
1. From the **Login** drop-down menu on the main screen, choose **Login XP4** menu item or just use the shortcut keys **Ctrl** & **L**.



2. The following dialog box appears. Enter the password & choose **OK** or **Cancel** to return to level 1 access.

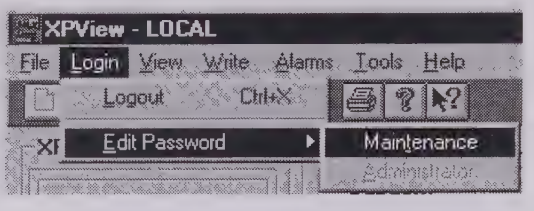


3. If the password was correct, the logged in level will be displayed on the Status Bar as **Maintenance** (Level 2) or **Administrator** (Level 3) when logged in (dependent on password entered) & **View Only** (Level 1) when not logged in. See below.

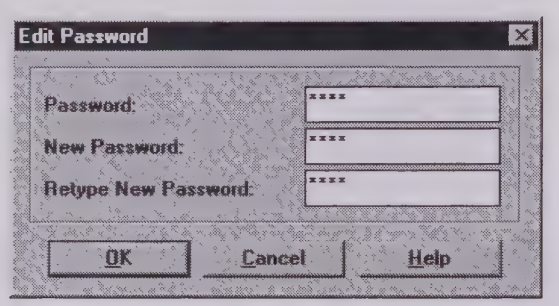

For Help, press F1 03/25/97 8:32:17 pm Monitor Off COM1 OFF-line View Only NUM
For Help, press F1 03/25/97 8:32:43 pm Monitor Off COM1 OFF-line Maintenance NUM
For Help, press F1 03/25/97 8:33:25 pm Monitor Off COM1 OFF-line Administrator NUM

3.4.3 Changing Passwords

1. From the **Login** drop-down menu on the main screen, choose **Edit Password** menu item or just use the shortcut keys **Ctrl & E**.



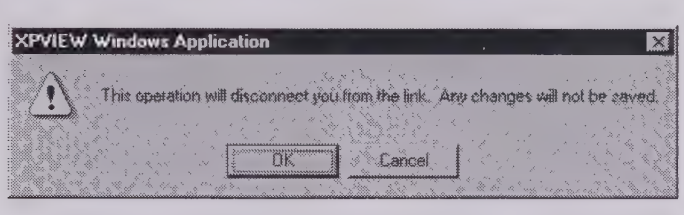
2. The following dialog box appears. Enter the current password, new password & a verification of the new password & choose **OK**.



3. If the old password was correct & the two new passwords were identical, a dialog box displaying **"New Password Accepted"** will be displayed. Choose **OK** to continue.

3.4.4 How to Logout

1. From the **Login** drop-down menu on the main screen, choose **Logout** menu item or just use the shortcut keys **Ctrl** & **X**. The following dialog box will be displayed:



2. Choose one of the following options:
   - **OK** to logout & return to level 1.
   - **Cancel** to stop the logout process return to the XPView main screen.

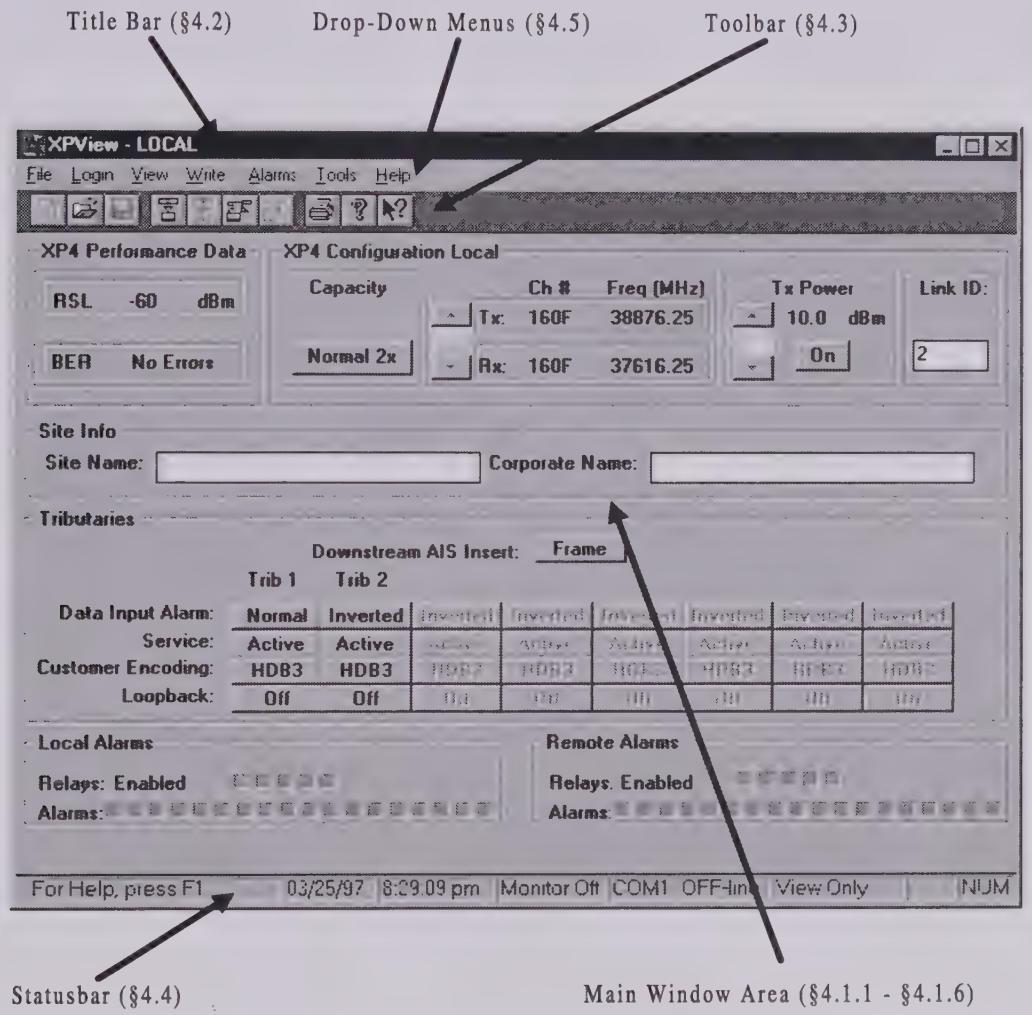
If the parameters on the XPView main screen were changed the user can write them to the radio or save them to a file before logging out. Parameters saved to a file can only be viewed but they cannot be changed or written to the radio.

Section 4

4. XPView Reference

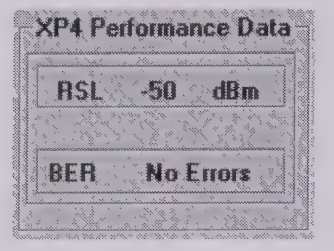
4.1 Main Screen Tour

The XPView main screen is split into several areas, each described in the following sections as referenced below.



XPView has a main window which can display either parameters read from the local radio or parameters read from the remote radio. There are other windows called dialogs which are displayed by selecting the appropriate menu items from the drop-down menus.
The parameters displayed on the main window of XPView are updated by the radio in real time.

4.1.1 XP4 Performance Data

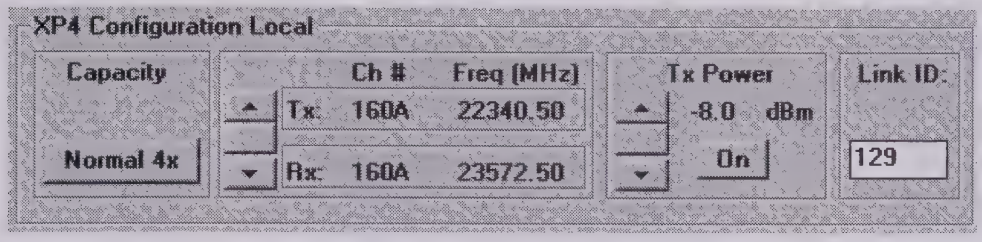


The portion of the main window titled **XP4 Performance Data** displays the received signal level (RSL) and bit error rate (BER) in real time.

XPView also indicates link failure modes in real time by displaying error messages in the portion of the window titled **XP4 Performance Data**.

Failure Mode	Error message
Local IDU	No Local IDU
Local ODU	No Local ODU
Remote IDU or ODU	No Remote Radio

4.1.2 XP4 Configuration

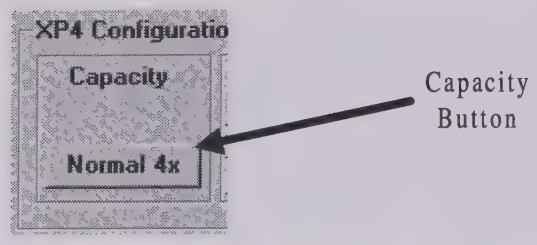


This part of the main window allows the user to change XP4:

- Capacity,
- Transmit/Receive Frequencies,
- Transmitter Power,
- Transmitter Mute Setting,
- Link ID Code.

Notes.
The **Remote** menu item under **Write** and the write local IDU button on the toolbar is disabled if XPView is displaying the local screen. Similarly the **Local** menu item under **Write** and the write local IDU button on the toolbar is disabled if XPView is displaying the remote screen.
To write to the local or remote radio, select the appropriate screen local or remote by selecting **Local** or **Remote** menu items from the **View** menu, change the relevant parameters & save to the XP4 by selecting either **Local** or **Remote** from the **Write** menu.

4.1.2.1 Changing XP4 Capacity



Log in to the radio as Level 2 or Level 3 to change the capacity.

1. On the XPView main window, click on the **Capacity** button. The caption on the button will toggle between **Normal 4x**, **Normal 2x**, and **Alternate 2x**. Capacity cannot be changed in conjunction with any other parameter. Other controls on the screen will be disabled until the capacity change is completed. When the capacity change is complete, the temporarily disabled buttons will return to normal operation. **Normal 4x** multiplexes 4 E1 or T1 tributaries. **Normal 2x** multiplexes 2 E1 or T1 tributaries. **Alternate 2x** multiplexes 2 E1 or T1 tributaries and the center frequency remains unchanged from **Normal 4x**. The capacity cannot be changed from Normal 2x to Alternate 2x. XPView displays the following warning message ***"Cannot change capacity from Normal 2x to Alternate 2x. Valid choice is from Normal 2x to Normal 4x"***.

2. Select the menu item **Local** from the **Write** menu or press the write local IDU button from the Toolbar.

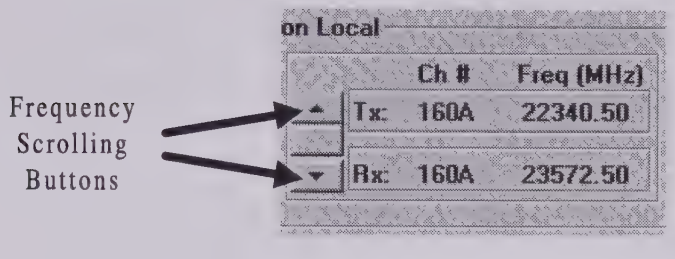
   Write local IDU button

   To write to the remote XP4, select the menu item **Remote** from the **Write** menu or press the write remote IDU button from the Toolbar.

   Write remote IDU button

3. The following message will be displayed: ***"Writing data to the radio may affect traffic. Do you want to continue?"***. Choose **OK** to write the data to the IDU or choose **Cancel** to cancel the write operation. Once the write operation is completed or canceled the controls which were disabled are again enabled. When capacity is changed **from Normal 4x** to **Normal 2x**, **Normal 2x** to **Normal 4x**, and from **Alternate 2x** to **Normal 2x** the radio is muted. XPView will display the following query ***"Do you wish to unmute the transmitter at this frequency?"***. Select **Yes** to unmute the transmitter or **No** to keep the transmitter muted.

4.1.2.2 Changing XP4 Transmit or Receive Frequency



Log in to the radio as Level 2 or Level 3 to change the frequency.
XPView calculates the Receive Frequency based on the Transmit to Receive (T-R) Spacing of the ODU. The T-R will be zero if there is no data from an IDU or ODU, consequently the Receive frequency will be equal to the Transmit frequency in this situation.
Note that the capacity button, power scroll, the power on/mute button, and the link ID are disabled. These parameters cannot be changed at the same time as the frequency. Other parameters which are displayed on the main screen and which are not disabled can be changed at the same time as the frequency.

1. On the XPView main window, click on the up arrow next to *Transmit Frequency* to increase the transmit frequency by one channel. Click the down arrow to decrease the transmit frequency by one channel. The step size is equal to the TT Spacing in the Radio Frequency Plan.

2. Select the menu item **Local** from the **Write** menu or press the write local IDU button from the Toolbar.

   Write local IDU button

   To write to the remote XP4, select the menu item **Remote** from the **Write** menu or press the write remote IDU button from the Toolbar.

   Write remote IDU button

3. The following message will be displayed: ***"Writing data to the radio may affect traffic. Do you want to continue?"***. Choose **OK** to write the data to the IDU or choose **Cancel** to cancel the write operation. Once the write operation is completed or canceled the controls which were disabled are again enabled.

4.1.2.2.1 Note on Channel Numbering

XPView main window displays transmit and receive channel numbers. Numerically the transmit and receive channel numbers are identical. The numerical values of the channel numbers can be further modified by a letter or a prime as specified by the user. If a letter is specified then a letter is displayed next to the channel number. At the present the letters C, D, E, and F are used corresponding to a TT spacing of 28 MHz, 14 MHz, 7 MHz, and 3.5 MHz, respectively. If a prime is specified then a prime is specified next to the transmit and receive channel number only if the ODU is a high band. The user can specify whether the front panel of the radio should display a frequency or a channel number. The user can also specify if the front panel of the radio and XPView should display a letter or a prime next to the channel number. XPView always displays channel number and frequency.

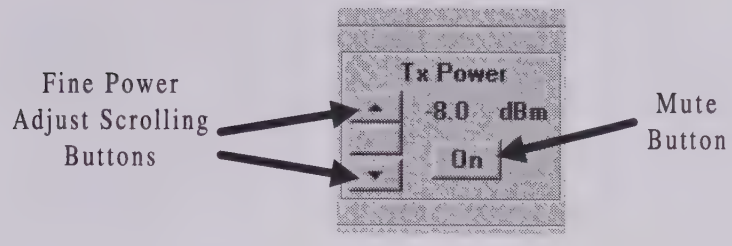
To specify whether the front panel should display a frequency or a channel number follow these steps:

1. Select the menu item **Radio Frequency Plans** from the **Tools** menu (login at Level 3 is required). A dialog box is displayed.
    - To display frequency on the front panel of the radio select the radio button next to **Freq** and select **OK**.
    - To display channel number on the front panel of the radio select the radio button next to **Ch#** and select **OK**.
2. Select **Cancel** to keep the original selection intact.

To specify whether the channel number should be modified by a letter or a prime follow these steps:

1. Select the menu item **Radio Frequency Plans** from the **Tools** menu (login at Level 3 is required). A dialog box is displayed.
    - To modify the channel number by a letter select the radio button next to **Letter** and select **OK**.
    - To modify the channel number by a prime select the radio button next to **Prime** and select **OK**.
2. Select **Cancel** to keep the original selection intact.

4.1.2.3 Changing XP4 Transmitter Power



4.1.2.3.1 Fine Adjustment

Log in to the radio as Level 2 or Level 3 to fine adjust the transmitter power.

1. On the XPView main window, click the up or down arrow on the scroll bars marked *Transmit Power*. The Transmit Power value will move up or down in 0.5 dB steps. Note that the capacity button, frequency scroll, the power on/mute button, and the link ID are all disabled. These parameters cannot be changed at the same time as the transmit power. Other parameters which are displayed on the main screen and which are not disabled can be changed at the same time as the power.

2. Select the menu item **Local** from the **Write** menu or press the write local IDU button from the Toolbar.

   Write local IDU button

   To write to the remote XP4, select the menu item **Remote** from the **Write** menu or press the write remote IDU button from the Toolbar.

   Write remote IDU button

3. The following message will be displayed: ***"Writing data to the radio may affect traffic. Do you want to continue?"***. Choose **OK** to write the data to the IDU or choose **Cancel** to cancel the write operation. Once the write operation is completed or canceled the controls which were disabled are again enabled.

4.1.2.3.2 Mute

Log in to the radio as Level 2 or Level 3 to change the transmitter power mute setting.

1. On the XPView main window, click on the On/Off button next to *Tx Power*. Clicking on the button switches the setting between **On** (normal transmitter operation) and **Mute** (transmitter mute). Note that the capacity button, frequency scroll, power scroll, and the link ID are disabled. These parameters cannot be changed at the same time as the power. Other parameters which are displayed on the main screen and which are not disabled can be changed at the same time as the power.

2. Select the menu item **Local** from the **Write** menu or press the write local IDU button from the Toolbar.

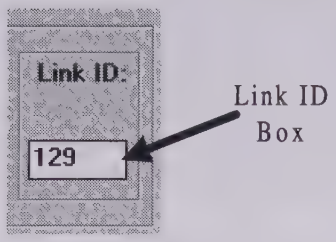
Write local IDU button

To write to the remote XP4, select the menu item **Remote** from the **Write** menu or press the write remote IDU button from the Toolbar.

Write remote IDU button

3. The following message will be displayed: ***"Writing data to the radio may affect traffic. Do you want to continue?"***. Choose **OK** to write the data to the IDU or choose **Cancel** to cancel the write operation. Once the write operation is completed or canceled the controls which were disabled are again enabled.

4.1.2.4 Changing XP4 Link ID



Log in to the radio as Level 2 or Level 3 to change the link ID.

1. Click inside the **Link ID** (identification) box. Note that the capacity button, frequency scroll, power scroll, and the power on/mute button are disabled. These parameters cannot be changed at the same time as the link ID. Other parameters which are displayed on the main screen and which are not disabled can be changed at the same time as the link ID.

2. Enter (type in) a number between 1 & 255. Verify that this is the correct ID for the link.

3. Changing the link ID at the local or remote side will automatically change the link ID for both the local and remote sides. Select menu item **Local** from the **Write** menu or press the write local IDU button from the Toolbar.

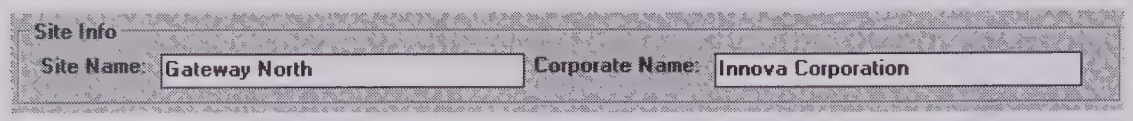
   Write local IDU button

   To write to the remote XP4, select menu item **Remote** from the **Write** menu or press the write remote IDU button from the Toolbar.

   Write remote IDU button

4. The following message will be displayed: ***"Writing data to the radio may affect traffic. Do you want to continue?"***. Choose **OK** to write the data to the IDU or choose **Cancel** to cancel the write operation. Once the write operation is completed or canceled the controls which were disabled are again enabled.

4.1.3 Site Info



Log in to the radio as Level 2 or Level 3 to change the site name or the corporate name.

1. On the XPView main window, click in the box next to *Site Name* or *Corporate Name*. If a site or corporate name already exists, delete it before entering a new name.

2. Enter the new site name or corporate name. A name cannot exceed eighteen characters.

3. Select the menu item **Local** from the **Write** menu or press the write local IDU button from the Toolbar.

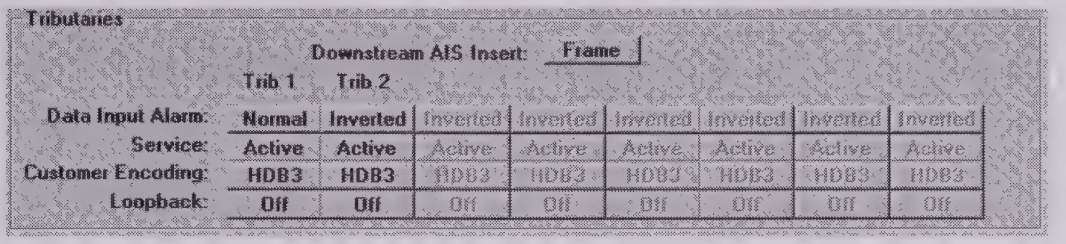
   Write local IDU button

   To write to the remote XP4, select the menu item **Remote** from the **Write** menu or press the write remote IDU button from the Toolbar.

   Write remote IDU button

4. The following message will be displayed: ***"Writing data to the radio may affect traffic. Do you want to continue?"***. Choose **OK** to write the data to the IDU or choose **Cancel** to cancel the write operation.

4.1.4 Tributaries



This part of the main window allow the user to change XP4:

- Downstream aggregate payload AIS insertion criteria,
- Tributary loss of data input alarm inversion,
- Tributary in-service,
- Customer encoding type for each tributary,
- Tributary loopbacks.

4.1.4.1 Changing the AIS Insert

Log in to the radio as Level 2 or Level 3 to change the alarm inhibit signal (AIS).
This button controls the AIS generated for transmission out of the tributaries at the remote XP4. The AIS Insert function can be switched between the following states:

- **Frame —** AIS will be inserted as a function of the frame status. The radio monitors the payload data's frame and whenever a frame loss is detected the AIS is inserted.
- **BER —** AIS will be generated on all tributaries when the BER is 10^{-3} or worse. AIS will be removed when BER is approximately 10^{-4} or better.

To change the AIS Insert function:

1. On the XPView main window, click on the button next to the label **AIS Insert**. Pressing this button will toggle the button text between **Frame** and **BER.**

2. Select the menu item **Local** from the **Write** menu or press the write local IDU button from the Toolbar.

   Write local IDU button

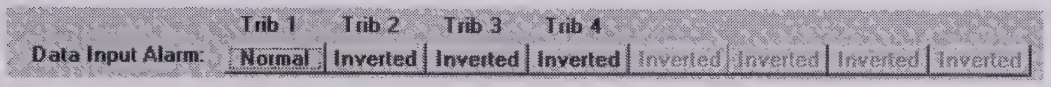
   To write to the remote XP4, select the menu item **Remote** from the **Write** menu or press the write remote IDU button from the Toolbar.

   Write remote IDU button

4. The following message will be displayed: ***"Writing data to the radio may affect traffic. Do you want to continue?"***. Choose **OK** to write the data to the IDU or choose **Cancel** to cancel the write operation.

Note:
If there is no input signal to the tributary, the hardware automatically generates AIS in the direction of the radio. This is done on a per tributary basis. There is no software control.

4.1.4.2 Changing the Tributary Data Input Alarm



Log in to the radio as Level 2 or Level 3 to change the tributary data input alarm. The number of buttons enabled depends on the current IDU type read from the local IDU.

To change the Tributary Data Input Alarm:

1. On the XPView main window, click on the button under the tributary corresponding to the row labeled **Data Input Alarm** to switch between **Normal** and **Inverted**:
   - **Normal —** A data circuit is attached to the tributary I/O port. Disconnecting the data circuit will activate an alarm.
   - **Inverted —** A data circuit is not attached to the tributary I/O port. Connecting a data circuit will activate an alarm.

2. Select the menu item **Local** from the **Write** menu or press the write local IDU button from the Toolbar.

   Write local IDU button

   To write to the remote XP4, select the menu item **Remote** from the **Write** menu or press the write remote IDU button from the Toolbar.

   Write remote IDU button

3. The following message will be displayed: ***"Writing data to the radio may affect traffic. Do you want to continue?"***. Choose **OK** to write the data to the IDU or choose **Cancel** to cancel the write operation.

4.1.4.3 Changing the Tributary Service

Service:	Active	Active	Active	Active	Active	Active	Active	Active

Log in to the radio as Level 2 or Level 3 to change the tributary service.

1. On the XPView main window, click on the button under the tributary corresponding to the row labeled **Service** to switch between **Active** and **Off**.
   - **Active** — A tributary is enabled and will transfer data across the XP4 link.
   - **Off** — AIS is inserted on the tributary across the XP4 link at all times.

2. Select the menu item **Local** from the **Write** menu or press the write local IDU button from the Toolbar.

   Write local IDU button

   To write to the remote XP4, select the menu item **Remote** from the **Write** menu or press the write remote IDU button from the Toolbar.

   Write remote IDU button

3. The following message will be displayed: ***"Writing data to the radio may affect traffic. Do you want to continue?"***. Choose **OK** to write the data to the IDU or choose **Cancel** to cancel the write operation.

4.1.4.4 Changing the Customer Encoding

Log in to the radio as Level 2 or Level 3 to change the customer encoding.

1. On the XPView main window, click the button under the desired tributary next to **Customer Encoding**. For an "E" format radio, XPView automatically selects **HDB3.** For a "T" format radio, pressing this button will switch between **AMI** and **B8ZS.**

2. Select the menu item **Local** from the **Write** menu or press the write local IDU button from the Toolbar.

   Write local IDU button

   To write to the remote XP4, select the menu item **Remote** from the **Write** menu or press the write remote IDU button from the Toolbar.

   Write remote IDU button

3. The following message will be displayed: ***"Writing data to the radio may affect traffic. Do you want to continue?"***. Choose **OK** to write the data to the IDU or choose **Cancel** to cancel the write operation.

4.1.4.5 Changing the Tributary Loopback

Log in to the radio as Level 2 or Level 3 to change the tributary loopback.

1. On the XPView main window, click on the button under the tributary corresponding to the row labeled **Loopback** to switch between **Off**, **Remote**, and **Local**.
   - **Local** — Data is looped back at the local tributary.
   - **Remote** — Data is looped back at the remote tributary.
   - **Off** — No loopback selected.

2. Select the menu item **Local** from the **Write** menu or press the write local IDU button from the Toolbar.

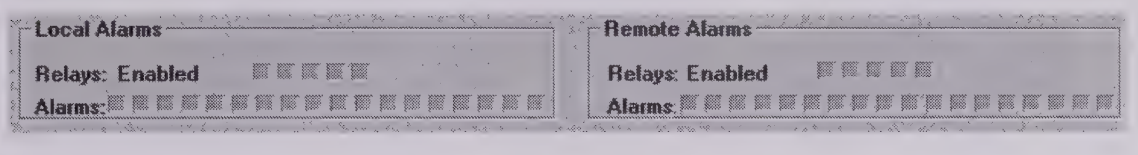
   Write local IDU button

   To write to the remote XP4, select the menu item **Remote** from the **Write** menu or press the write remote IDU button from the Toolbar.

   Write remote IDU button

3. The following message will be displayed: ***"Writing data to the radio may affect traffic. Do you want to continue?"***. Choose **OK** to write the data to the IDU or choose **Cancel** to cancel the write operation.

4.1.5 Alarms

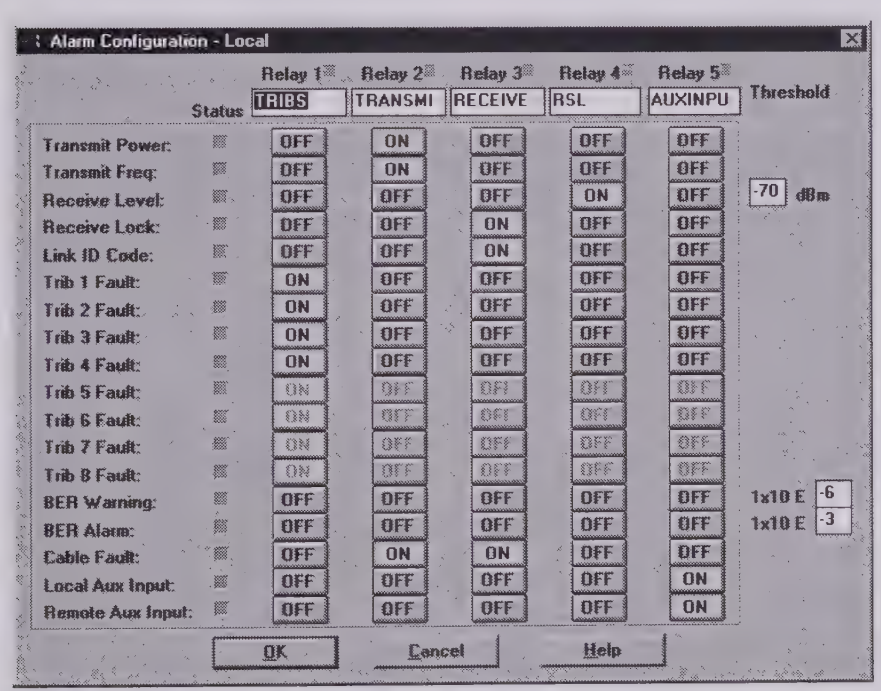


These boxes display the relay & discrete alarm states for local and remote radios. Clicking anywhere within either the local or remote indicator box will display the local or remote Alarm Configuration dialog box.

The color of the box indicates the alarm display status:

- **Blue:** Relay does not have any alarms assigned.
- **Green:** Alarm is inactive.
- **Red:** Alarm is active.

4.1.5.1 Alarm Configuration Dialog Box



To configure and activate alarm relays:

1. Either:
   - Select the menu item **Local Configuration** or the menu item **Remote Configuration** from the **Alarms** menu.

   OR
   - Click anywhere within the XPView main screen **Local Alarms** or **Remote Alarms** indicator box.

2. Each relay has a column of alarms listed under it. Click on the button for the alarm to configure. Ensure that the correct alarm for the correct relay is selected.

3. Thresholds for **BER Warning, BER Alarm** and **Receive Level** can be altered. The threshold ranges are:

Alarm Name	Threshold Range	Default Value
Receive Level	-60 to -80 dBm	-70 dBm
BER Alarm	10E -3 to -6	10E -3
BER Warning	10E -3 to -6	10E -6

4. Choose either
   - **OK** to save this alarm display configuration and close the dialog box.
   - **Cancel** to discard the changes and close the dialog box.
   - **Help** to get more information.

5. Clicking on **OK** will bring up a dialog box with the following question: "***Do you want the local relays active?***" if the **Local Configuration** was selected. If the **Remote Configuration** was selected then the question is "***Do you want the remote relays active?***".

6. Choose
   - **Yes** to enable the XP4 relays and status boxes. The main screen displays the text **Enabled** in the appropriate section of the main screen pertaining to alarms. The color of the LEDs which represents relays will change to teal green. The LED corresponding to a relay will change color to a red if an event enables that relay.
   - **No** to disable the alarm status boxes. The main screen displays the text **DISABLED** in the appropriate section of the main screen pertaining to alarms. The color of the LEDs which represents relays will change to blue.

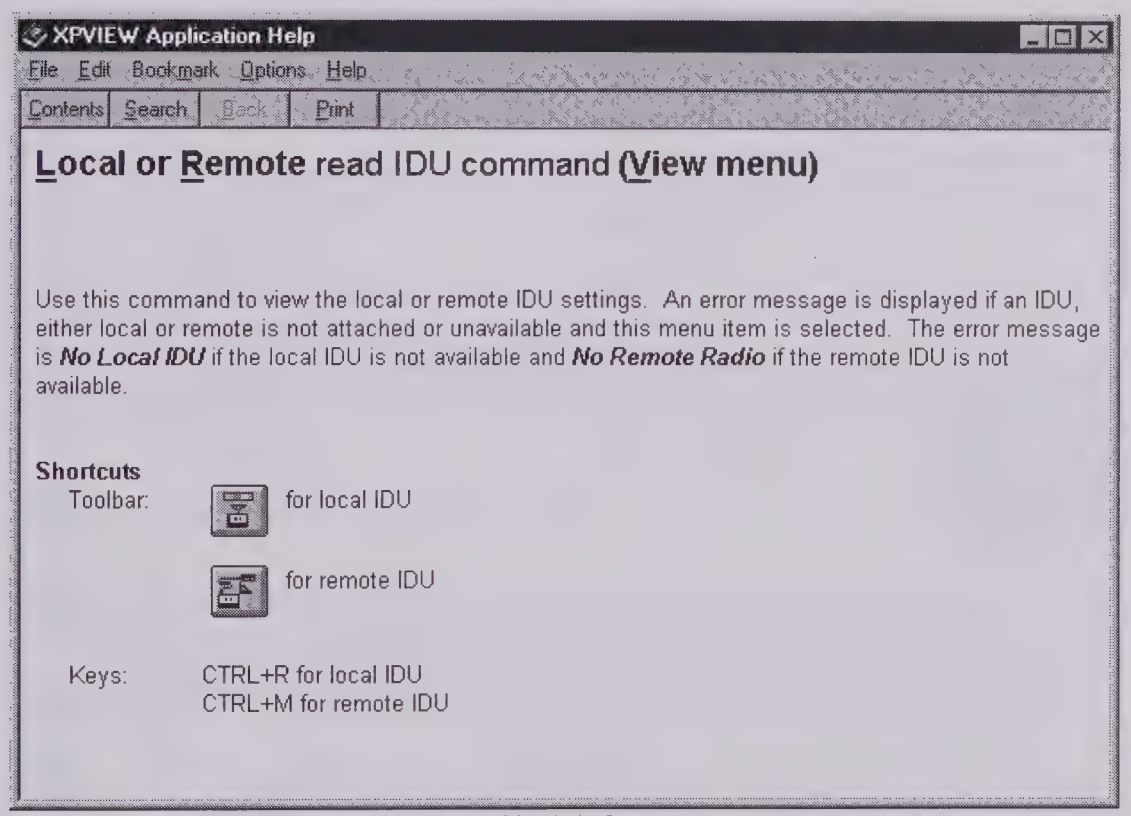
4.1.6 Context Sensitive Help

Use the Context Help command to get information on a specific item in the XPView window. When the Toolbar's Context Help button is chosen, the mouse pointer changes to an arrow and question mark. Then click on an item in the XPView window, such as a Toolbar button. The Help topic will display for the item that was selected.

Shortcut

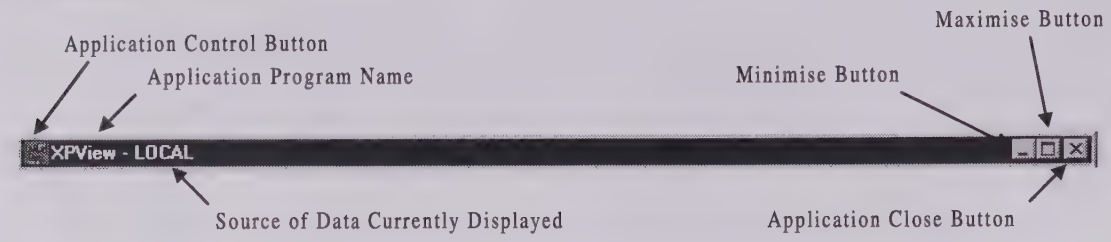
Toolbar:

Keys: SHIFT+F1


XPVIEW Application Help
File Edit Bookmark Options Help
Contents Search Back Print
Local or Remote read IDU command (View menu)
Use this command to view the local or remote IDU settings. An error message is displayed if an IDU, either local or remote is not attached or unavailable and this menu item is selected. The error message is No Local IDU if the local IDU is not available and No Remote Radio if the remote IDU is not available.
Shortcuts
Toolbar:
for local IDU
for remote IDU
Keys:
CTRL+R for local IDU
CTRL+M for remote IDU

A typical help screen invoked using context sensitive help feature.

4.2 Title Bar

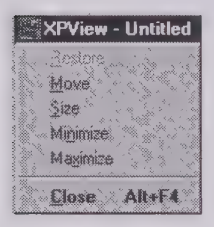


The title bar is located along the top of the XPView main screen.
It contains the name of the current program & the source of data currently displayed within the window below it.

The title bar can be used for the following functions:

- **Moving** the whole XPView window on the PC screen,
- **Custom sizing** of the XPView window on the PC screen,
- **Minimizing** the XPView window,
- **Maximizing** the XPView window,
- **Closing down** the XPView Application Program.

To **move** the window on the PC screen, use the mouse to position the cursor over the title bar, click & drag the whole window to the desired position.



Alternatively, using the Application Control Menu (activated using ALT + SPACEBAR) select **Move** & use the arrow keys to move the window. Press ENTER to accept new window position.

To **size** the window, use the mouse to position the cursor over a title bar corner (or any corner of the whole XPView window). The cursor will change to a double headed arrow inclined at 45 degrees indicating that the window may be sized. Click & drag the corner of the window until the desired size is achieved.
Alternatively, using the Application Control Menu (ALT + SPACEBAR) select **Size** & use the arrow keys to size the window. Press ENTER to accept new window size.

To **minimize** the window, position the cursor over the **Minimize Button** & click once.
Alternatively, using the Application Control Menu (ALT + SPACEBAR), select **Minimize**.

To **maximize** the window, position the cursor over the **Maximize Button** & click once.
Alternatively, using the Application Control Menu (ALT + SPACEBAR), select **Maximize**.

To **close down** the XPView Application Program, position the cursor over the **Application Close Button** & click once.
Alternatively, using the Application Control Menu (ALT + SPACEBAR), select **Close**.

4.3 Toolbar

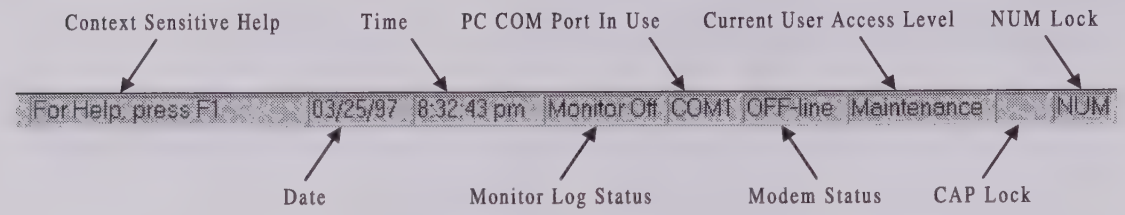
The **toolbar** is a row of buttons positioned below the drop-down menus on the XPView screen. These buttons perform common XPView tasks, such as opening configuration files, writing to the local or remote IDU, and saving the displayed configuration to a file.
The background color of the toolbar indicates the source of the data:

Toolbar Color	Source of data displayed on XPView window
Teal/Green	Data from **local** IDU & ODU
Red	Data from **remote** IDU & ODU
Blue	Data from a **File**

To hide or display the Toolbar, choose the Toolbar command from the View menu (ALT, V, T).

Click	To
	Create a new configuration file (this feature is not currently available).
	Open an existing configuration file. XPView displays the Open dialog box, to find and open the desired file.
	Save the active configuration file with its current name. If the file has not been named, XPView displays the Save As dialog box.
	Read configuration data from the local IDU.
	Write the current configuration to the local IDU.
	Read configuration data from the remote IDU.
	Write the current configuration to the remote IDU.
	Print reports for the current site.
	Display the About XPView box.
	Switch to context-sensitive help mode.

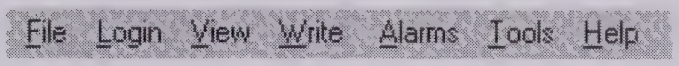
4.4 Status Bar



The status bar is displayed at the bottom of the XPView window.
To display or hide the status bar, use the **Status Bar** menu item in the **Tools** menu (ALT, T, S).

Status bar box	**Comments**
Context Sensitive Help	Lists **context sensitive help** when the cursor is on a menu, menu item, toolbar, or toolbar button & the mouse button is clicked & held down. If the user does not want to execute the command after viewing its description, move the cursor off the object onto an empty part of the main window.
Date	Current **date**
Time	Current **time**
Monitor Log Status	• **Monitor Off** indicates that XPView is not monitoring. • **Monitor On** indicates that monitoring is enabled and XPView is recording events
PC COM Port In Use	The PC Serial **COM** port number XPView uses to communicate to the XP4. Valid ports are 1, 2, 3 or 4.
Modem Status	• **OFF line** indicates that the modem is disconnected. • **ON line** indicates that the modem is connected.
Current User Access Level	Indicates the user is connected to the XP4 with level ***N*** privileges. ***N*** is 1, 2 or 3. • **View Only** = Level 1. • **Maintenance** = Level 2. • **Administrator** = Level 3.
CAP Lock	Indicates status of the **CAPS** lock on the PC keyboard. No text indicates OFF, **CAPS** indicates ON.
NUM Lock	Indicates status of the **NUM** lock on the PC keyboard. No text indicates OFF, **NUM** indicates ON.

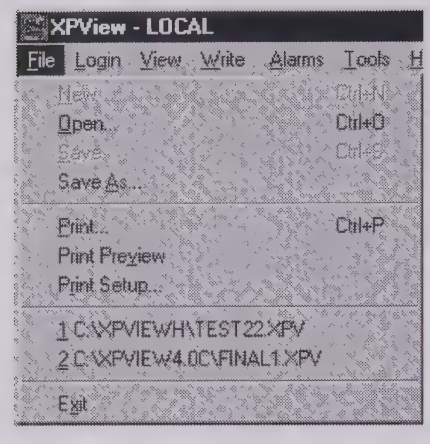
4.5 Drop-Down Menus



The drop-down menus are located at the top of the XPView window, between the title bar & the toolbar. The menus drop down to reveal sub-menus of options.
Select a menu using the mouse or by pressing the ALT key at the same time as the underlined letter of the desired menu item, e.g. ALT + F for the File menu.
Horizontal scrolling between menus is achieved using the keyboard horizontal arrow keys or the mouse. Vertical movement within each menu item is achieved using the keyboard vertical arrow keys or the mouse. To select a sub-menu item, hit the key corresponding to the underlined letter of the option on the drop-down menu or use the keyboard arrow keys to highlight & hit Enter or click the mouse button once the cursor is positioned above the item of choice.

The following sections detail the commands available through the drop-down menus.

4.5.1 File Menu Commands



The following commands are available:

Open...
Opens an existing configuration file.

Save
Saves the current configuration file using the same file name.

Save As...
Saves the current configuration file with a specified file name.

Print...
Prints system configuration reports.

Print Preview
Shows how reports will look when they are printed.

Print Setup...
Selects a printer and printer connection.

1,2,3,4 Command
Opens one of the last four files previously opened.

Exit
Exits XPView.

The **File** menus are mainly related to the management of *configuration files*.
Configuration files contain configuration related information about the local or remote XP4.
Note that it is not possible to download XP4 configuration files to the XP4.

Configuration reports contain information about the local or remote XP4.
XPView can print several types of configuration reports. Each type of report is a filtered subset of the configuration parameters displayed on the XPView main window.

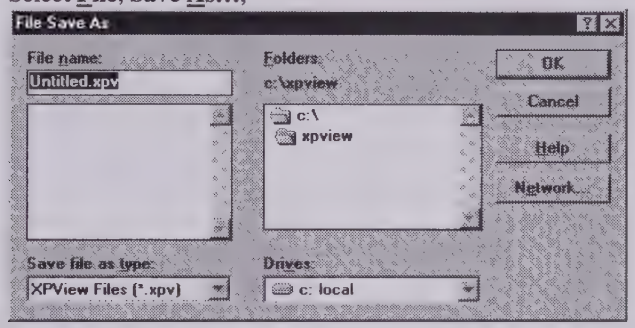
- *System Report (Local or Remote)*
  This report includes information about Radio Frequency Plans, IDU and ODU parameters, Tributary information, Diagnostic Tools, Link ID, Site Name and Corporate Name.

- *Alarm Configuration Report (Local or Remote)*
  This report includes the Alarm Configuration and Threshold information.
- *Radio Frequency Plans (Local or Remote)*
  This report includes the Radio Frequency Plans for the local and remote sites.
- *Terminal Configuration Report*
  This report is a blank form that you can use to view available configuration options. You can use this report to determine how you want to set up a link.

Sample reports of each type are given in section 5.1.

To save a XP4 configuration to file

1. Login to XP4 as level 2 or 3,
2. Select **File**, **Save As...**,

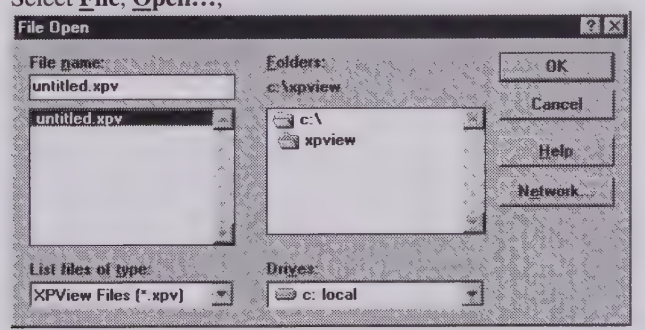


3. Enter filename of choice in the **File Save As** dialog box,
4. Choose **OK**.

The file is saved to the PCs hard-disk-drive & may be viewed or printed off-line (i.e., whilst not connected to the XP4) using XPView.

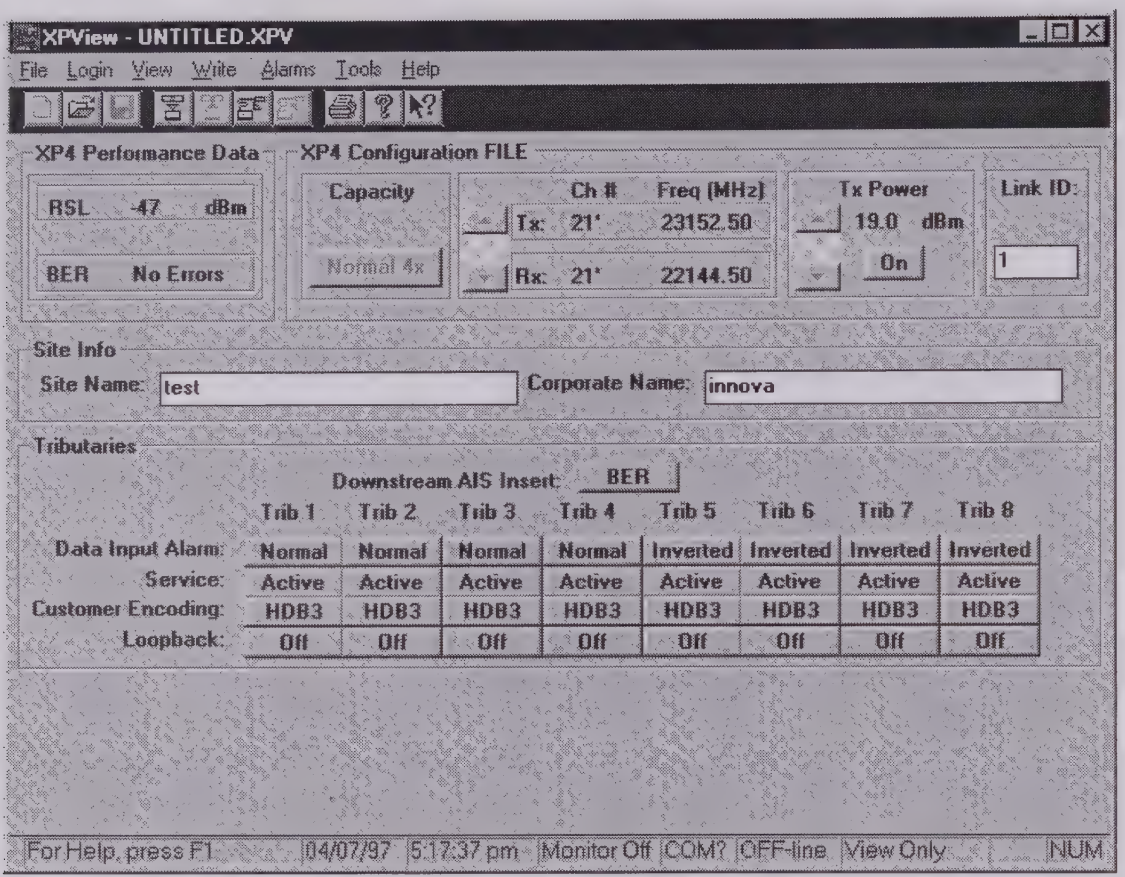
To display a saved XP4 configuration file from the PC hard-disk-drive using XPView.

1. Start XPView.
2. Select **NO PORT** from the *serial port selection box* displayed during XPView startup,
3. Choose **OK**,
4. Select **File**, **Open...**,



5. Locate file using **File Open** box,
6. Choose OK.

The file's parameters are displayed on the XPView screen (next page).


XPView - UNTITLED.XPV
File Login View Write Alarms Tools Help
XP4 Performance Data
RSL -47 dBm
BER No Errors
XP4 Configuration FILE
Capacity
Normal 4x
Ch # Freq (MHz)
Tx: 21* 23152.50
Rx: 21* 22144.50
Tx Power
19.0 dBm
On
Link ID:
1
Site Info
Site Name: test
Corporate Name: innova
Tributaries
Downstream AIS Insert: BER
Trib 1 Trib 2 Trib 3 Trib 4 Trib 5 Trib 6 Trib 7 Trib 8
Data Input Alarm: Normal Normal Normal Normal Inverted Inverted Inverted Inverted
Service: Active Active Active Active Active Active Active Active
Customer Encoding: HDB3 HDB3 HDB3 HDB3 HDB3 HDB3 HDB3 HDB3
Loopback: Off Off Off Off Off Off Off Off
For Help, press F1 04/07/97 5:17:37 pm Monitor Off COM? OFF-line View Only NUM

Note the appearance of the filename in the title bar instead of **LOCAL** or **REMOTE** and note the blue color of the toolbar. Both these indications show XPView is displaying data from a configuration file.
Also note that this data cannot be edited/altered.

4.5.1.1 File menu: Open

Use this command to open an existing XPView configuration file. A configuration file can be opened in any access level. To open a file quickly, click the Open button on the Toolbar.

Shortcuts

Toolbar:

Keys: CTRL+O

Dialog box options

The following options allow the user to specify which file to open:

File Name

Type or select the filename to open.

List Files of Type

Select the file to open. **Configuration files end with a *"xpv"* extension.**

Drives

Select the drive where the file is saved.

Directories

Select the directory where the file is saved.

Network...

Choose this button to connect to a network location.

4.5.1.2 File menu: Save

Select this menu item to save the configuration file to its current directory and name.
Select the **Save As** command to change the name and directory of an existing file before saving it.

When a file is saved for the first time, XPView prompts the user to name the file.

Files can be saved only if the password level gives the user access rights to files.

Shortcuts

Toolbar:

Keys: CTRL+S

4.5.1.3 File menu: Save As

Use this command to specify the name and location to save the current configuration file.

To save a file to its existing name and directory, use the Save command or the Save button on the Toolbar.

Files can be saved only if the password level gives the user access rights to files.

Dialog box options
The following options allow the user to specify the name and location to save the file:

File Name
Type a filename here. A filename can contain up to eight characters and an extension of up to three characters. The default extension for XPView files is *.XPV.

Save File As Type
XPView files will be saved with the .XPV extension, unless other extensions are specified. **If extension other than .XPV is specified, then the file cannot be opened.**

Drives
Select the drive to save the file.

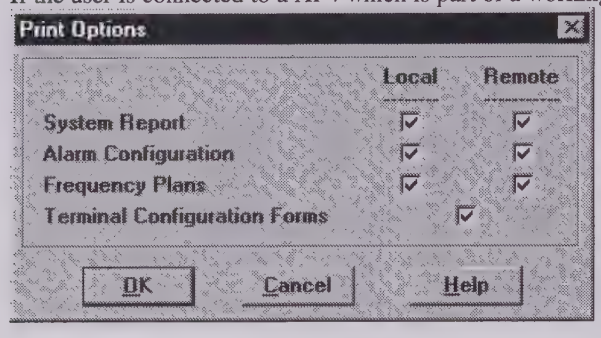
Directories
Select the directory to save the file.

Network...
Choose this button to connect to a network location.

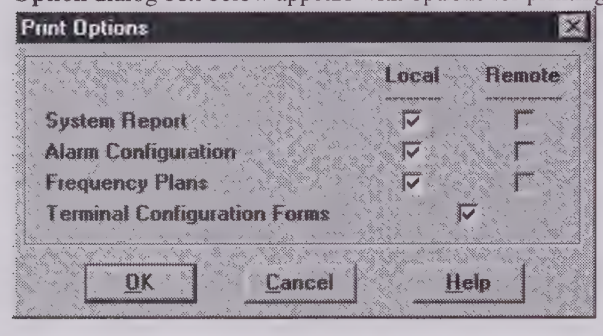
4.5.1.4 File menu: Print

Use this command to print a configuration report. A dialog box appears through which the user can specify which reports to print.

If the user is connected to a XP4 which is part of a working link, the **Print Option** dialog box below appears.



If the user is not connected to an XP4, or connected to a XP4 which is not part of a working link, the **Print Option** dialog box below appears with options for printing the remote XP4 reports grayed out.



Shortcuts
Toolbar:
Keys: CTRL+P

Dialog box options
The following options allow the user to specify which reports to print:

System Report (Local or Remote)
This option will print the system configuration for the local or remote XP4.

Alarm Configuration (Local or Remote)
This option will print the alarm configuration for the local or remote XP4.

Radio Frequency Plans (Local or Remote)
This option will print the radio frequency plans for the local or remote XP4.

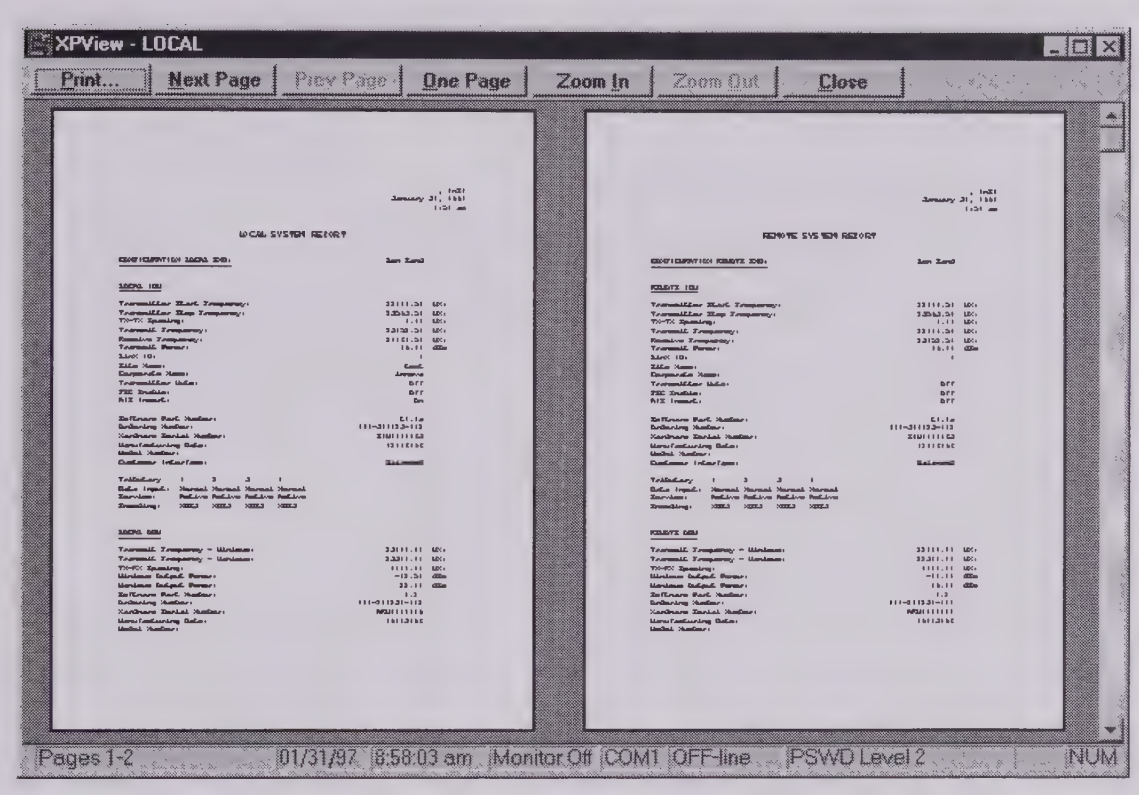
Customer Configuration
This option will print a blank customer configuration form. This form can be used to record a new configuration.

The user cannot print remote reports if the remote XP4 is not working or not connected. If the local XP4 is not working or not connected, the user can still print reports, however, the reports will not contain any information about the local XP4.

4.5.1.5 File menu: Print Preview

Use this menu item to display how the reports will appear when printed. The Print Preview window displays the report to be printed when this menu item is selected.

The print preview toolbar allows the user to set viewing options, move through the document and start a print job.



Print Preview toolbar options

The print preview toolbar offers the following options:

Print

Bring up the print options dialog box, to start a print job.

Next Page

Preview the next printed page.

Prev Page

Preview the previous printed page.

One Page/Two Page

Preview one or two printed pages at a time.

Zoom In

Enlarges the page to show more detail.

Zoom Out

Reduces the page to show more of the page.

Close

Return from print preview to the editing window.

4.5.1.6 File menu: Print Setup

Use this command to select a printer and a printer connection. The options available depend on the printer selected.

Dialog box options

Printer

Select the printer to use. Choose the Default Printer, or choose the Specific Printer option and select one of the currently installed printers shown in the box. The user can install printers and configure ports using the Windows Control Panel. See the Windows documentation.

Orientation

Choose Portrait or Landscape.

Paper Size

Select the size of paper on which to print the document.

Paper Source

Some printers offer several trays for different paper sources. Specify the tray here.

Options

Displays a dialog box where the user can specify options for the type of printer that has been selected.

Network...

Choose this button to connect to a network location.

4.5.1.7 File menu: 1, 2, 3, 4 Command

Use the numbers and file names listed at the bottom of the **File** menu to open one of the last four previously opened files. Choose the number that corresponds to the filename to open.

4.5.1.8 File menu: Exit

Ends the XPView session. XPView displays the following warning message. ***"This operation will disconnect you from the link. Any changes will not be saved."*** The user has a choice either to proceed with the exit operation or continue with the XPView session.

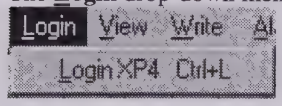
The Close command on the Application Control Button (see section 4.2) can also be used. Press ALT+SPACEBAR, then choose Close.

Shortcuts

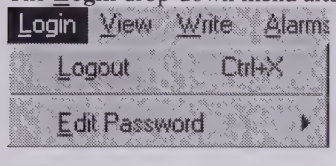
Mouse:	Double-click the application's Control menu button.
Keys:	ALT+F4

4.5.2 Login Menu Commands

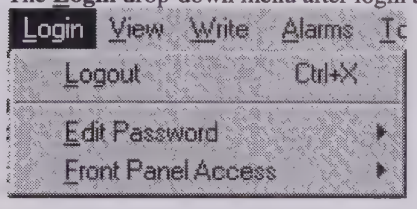
The **Login** drop-down menu at level 1.



The **Login** drop-down menu after login at level 2.



The **Login** drop-down menu after login at level 3.



The following commands are available:

Login XP4
Logs in to the local XP4 IDU.

Logout
Logs out of the current access level from the XP4.

Edit Password
Changes password of the current access level or the password of a lower access level.

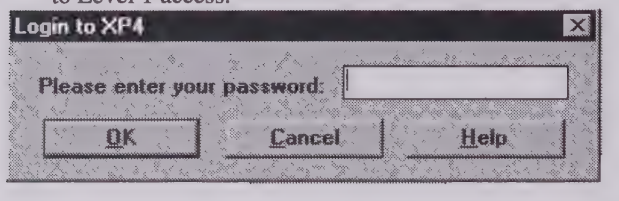
Front Panel Access
Controls access to the IDU front panel speedkeys & display.

4.5.2.1 Login menu: Login XP4

There are three levels of access. Level 1 access requires no password. The user can only view parameters from the radio. Levels 2 and 3 require password. Each level can have a unique password. These levels give the user a read and a write capability from and to the radio. As the levels increase, the user gets access to more features of XPView (see section 3.4.1 for an Access Level Vs Feature comparison). A password is limited to six numeric digits.

To Login to the XP4:

1. From the **Login** menu, choose **Login XP4**.
2. The login dialog box (below) appears. Type in the password and choose **OK** or choose **Cancel** to return to Level 1 access.



A user cannot log on to the remote radio. When logged in, the user has access to all configuration features permitted by the access level at BOTH local & remote XP4s.
If XPView is displaying the remote XP4 screen, performing a **Login XP4** will result in the user logging into the local radio and XPView will display the local screen again.
If an incorrect password is entered, the following message is displayed "***Invalid Password! Please Try Again.***"

Shortcuts
Keys: CTRL+L

4.5.2.2 Login menu: Logout

To Logout from the XP4:

1. From the **Login** menu, choose **Logout**. The following warning message is displayed: ***"This operation will disconnect you from the link. Any changes will not be saved."***
2. Choose:
    - **OK** to logout from the radio and return to Level 1 access.
    - **Cancel** to stop the logout operation and return to the logged in state at the current access level.

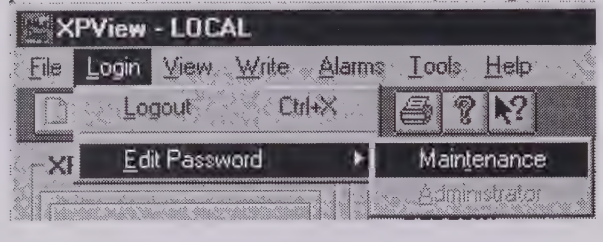
If the parameters on the XPView were changed the user can write them to the radio or save them to a file before logging out. Parameters saved to a file can only be viewed but they cannot be changed or written to the radio. After logout, most menu commands will be disabled.

Shortcuts
Keys: CTRL+X

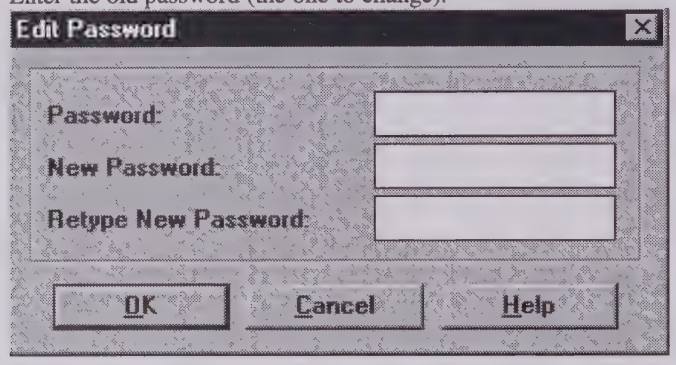
4.5.2.3 Login menu: Edit Password

Password of access level which a user has logged in or a lower access level can be changed. For example, from level 3 (Administrator) access, password of that access level or level 2 (Maintenance) access can be changed. From level 2 access, password of only level 2 access can be changed.

1. From the **Edit Password** menu item of **Login** menu, choose either **Maintenance** or **Administrator** menu item. In level 3 access, both the **Maintenance** and **Administrator** menu items are accessible (see picture below), while in level 2 access only **Maintenance** is accessible.



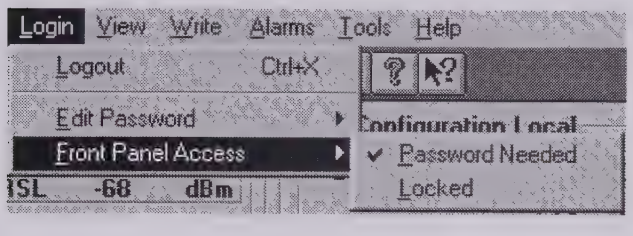
2. The Edit Password dialog box displays (below). The cursor will be flashing in the box labeled **Password**. Enter the old password (the one to change).



3. Press the **Tab** key to move to the next line.
4. The cursor will move to the box labeled **New Password**. Enter the new password.
5. Press the **Tab** key to move to the next line, labeled **Retype new password**.
6. Re-enter the new password.
7. Choose **OK**. The message "***New password accepted***" is displayed if the old and new passwords were correctly entered.
   The error message "***Old password must be the current login password. Please try again***" is displayed if the old password was incorrectly entered.
   If the new password was incorrectly entered, then the error message "***New Password must be typed in twice & they must be the same. Please try again.***" is displayed. The user is allowed to try three times after which the error message "***Maximum tries exceeded, password not set***" is displayed.
   The password must be between 4 & 7 digits in length, otherwise the error message "***New Password must be 4 to 7 numbers. Please try again.***" is displayed.
   Choose **Cancel** to forego the password changing operation.

4.5.2.4 Login menu: Front Panel Access

The user must be logged in as level 3 to change the XP4 front panel access. The front panel access of both the local radio and the remote radio can be changed independently of each other. To change the front panel access of the local or remote radio, select the appropriate screen local or remote by selecting **Local** or **Remote** menu items from the **View** menu.



The following options are available:

Password Needed
A check mark (✓) next to the menu item indicates that a password must be entered using the IDUs Speedkeys to gain configuration access to the IDU via the front panel.
The absence of a check mark (✓) indicates no password is required to configure the IDU via its Speedkeys. *Note. In this case the orange IDU "LOGGED IN" LED will illuminate permanently indicating that no password is required to configure the XP4.*
Any of the XPView passwords (level 2 or level 3) may be used to gain access to the IDU keypad.

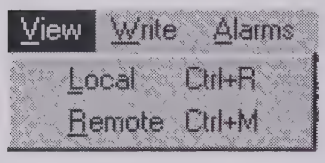
Locked
A check mark (✓) next to the menu item indicates that the IDU Speedkeys & 7 digit LED display are locked out (may not be used). Pressing any key on the IDU keypad will result in no action.
The absence of a check mark (✓) indicates normal access to the IDU via its Speedkeys & 7 digit LED display is enabled.

Note that the menu items **Locked** and **Password Needed** cannot both be selected at the same time.

To change front panel access:

1. Select **Front Panel Access** from the **Login** menu. The currently selected option will have a checkmark next to it. The default option is ✓ **Password Needed**.
2. To remove front panel restrictions: Highlight & select the menu item **Locked** or **Password Needed** that currently has a check mark. The checkmark will disappear from that menu item and both the menu items will not have a check mark next to them. There are now no restrictions to front panel access.
3. To lock out access to the front panel of the radio: Highlight & select the menu item **Locked.** A checkmark will appear next to it.
4. To set password access to the front panel of the radio: Highlight & select the menu item **Password Needed.** A checkmark will appear next to it.

4.5.3 View Menu Commands



The following commands are available:

Local
Displays configuration data read from the local XP4 in the XPView main window.

Remote
Displays configuration data read from the remote XP4 in the XPView main window.

4.5.3.1 View menu: Local or Remote

Use this command to view the local or remote IDU settings. An error message is displayed if an IDU, either local or remote is not attached or unavailable and this menu item is selected. The error message is ***"No Local IDU"*** if the local IDU is not available and ***"No Remote Radio"*** if the remote IDU is not available.

Shortcuts

Toolbar: for local IDU

for remote IDU

Keys: CTRL+R for local IDU
CTRL+M for remote IDU

4.5.4 Write Menu Commands

The following commands are available:

Local
Writes configuration data displayed on the XPView main window into the local XP4.

Remote
Writes configuration data displayed on the XPView main window into the remote XP4.

Note that only one of **Local** or **Remote** menu items is available at any one time on this drop-down menu depending on whether the main XPView window is displaying local or remote XP4 data.

4.5.4.1 Write menu: Local or Remote

Use this command to write the configuration displayed on the screen to the local or remote IDU. The user must be logged in at level two or level three in order to write to the IDU. This option will be dimmed if the current password level does not allow a write to the IDU.

Before writing to the IDU, XPView will display a warning message:
"***Writing data to the radio may affect traffic. Do you want to continue?***"
Verify the information before writing to the IDU.

Shortcuts

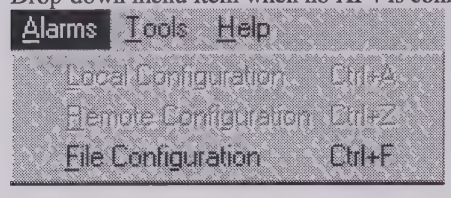
Toolbar: for local IDU

for remote IDU

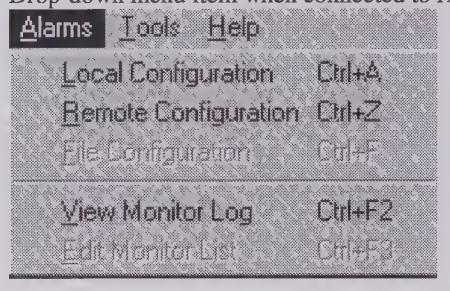
Keys: CTRL+W for local IDU
CTRL+U for remote IDU

4.5.5 Alarms Menu Commands

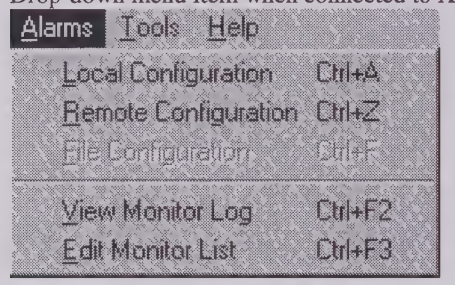
Drop-down menu item when no XP4 is connected to XPView.



Drop-down menu item when connected to XP4 with level 1 access.



Drop-down menu item when connected to XP4 with level 2 or 3 access.



The following commands are available:

Local Configuration
Displays the local XP4 alarm configuration and allows the user to re-configure.

Remote Configuration
Displays the remote XP4 alarm configuration and allows the user to re-configure.

File Configuration
Displays the file's alarm configuration and allows the user to re-configure.

View Monitor Log
Displays the Monitor Log file using the MS-Windows Notepad™ program.

Edit Monitor List
Displays the list of events that can be monitored. Enables user to check events that require monitoring

Monitor log overview

- XPView can monitor two types of events: alarm events & level events (RSL & BER), see section 4.5.5.4 for details of which events can be monitored.
- The default monitoring *period* (how often XPView monitors) is 24 hours from the time the menu item **Edit Monitor List** is selected. This period may be changed by editing.
- The default monitoring *interval* (how often XPView checks for events) is 1 minute for alarm events & 10 minutes for level events. The level event interval is editable, the alarm event interval is not.
- Events that last less than 1 minute will be detected. However, since events are logged to the nearest minute, the event record will appear to begin & end at the same time. If the alarm occurs several times during the course of a minute, the corresponding number of duplicate entries will be shown.
- When the monitor session is activated, XPView creates an ASCII file; **c:\xpview\monitor.log**. Any word processor may be used to vies the log's contents. The default word processor used by XPView to view the file when the menu item **View Monitor Log** is selected is the MS-Windows Notepad™ program. If the monitor log file is too large for Notepad to open an error message will be displayed. Use a word processor such as MS-Word to open large log files.
- XPView re-creates **c:\xpview\monitor.log** each time a new monitor session is started. Any data in a previously existing file of the same name will be lost. Therefore, rename the file after each monitor session.
- Notepad will only print the whole file. If only certain pages or parts of the log file are required for print a more powerful word processor such as MS-Word should be used.
- The monitor logging status is shown on the status bar at the bottom of the XPView window.

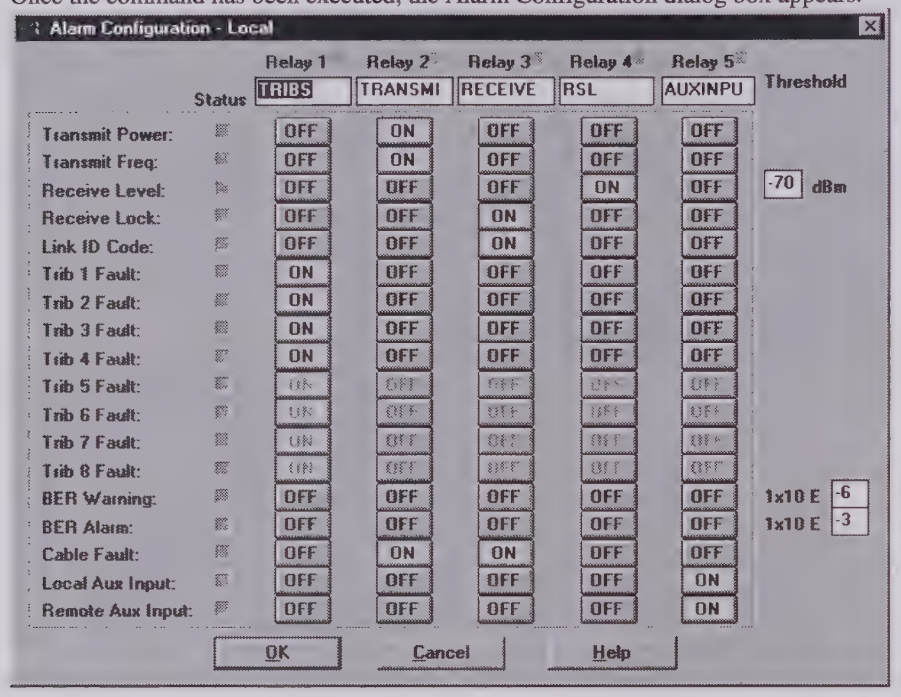
4.5.5.1 Alarms Menu: Local or Remote Configuration

Use this command to view and/or change the alarm relays for the local or remote IDU. The user must configure and activate the local and remote relays separately.

Shortcuts

Keys: CTRL+A for local alarm configuration
CTRL+Z for remote alarm configuration

Once the command has been executed, the Alarm Configuration dialog box appears.



The Alarm Configuration dialog box allows the user to map any discrete XP4 alarm to any one of the five relays, once or several times over. The thresholds of certain alarms are also adjustable.
The Alarm Configuration dialog box has the following features:

Discrete alarm list
The left side of the window shows a list of all available XP4 system alarms for reference.

Discrete alarm status indicators
The status of each discrete alarm is indicated by a colored box adjacent to the alarm description text. The color of the box indicates the alarm display status:

- **Blue**: Alarm configuration is being read from a file.
- **Green**: Alarm is inactive.
- **Red**: Alarm is active.

Relay status indicators
Above each of the five relay columns is a colored box indicating relay status:

- **Blue**: Relay is not armed for use.
- **Green**: Relay is in alarm mode.
- **Red**: Relay is in no-alarm mode.

Relay name fields
At the top of each relay columns is a text field that is used to indicate the relays designated function. Each relay name may be any alphanumeric string of up to 8 characters.

Threshold column
Thresholds for **BER Warning, BER Alarm** and **Receive Level** can be altered.

Alarm Name	Threshold Range	Default Value
Receive Level	-60 to -80 dBm	-70 dBm
BER Alarm	10E -3 to -6	10E -3
BER Warning	10E -3 to -6	10E -6

Alarm Mapping Buttons
There are five columns of buttons that are used to map each alarm to the desired relay(s).
Mapped alarms are indicated by a the button displaying a yellow color & the text "ON" in the button.
Unavailable alarms (e.g. tribs 5-8 on a radio configured as 4x) are indicated by a graying out of the black "ON" or "OFF" text in the button

OK button
This button will save the alarm configuration displayed and close the dialog box.
Clicking on **OK** will bring up a dialog box with the following question: "***Do you want the local relays active?***" if the **Local Configuration** was selected. If the **Remote Configuration** was selected then the question is "***Do you want the remote relays active?***".
Choose:

- **Yes** to enable the XP4 relays.
- **No** to disable the XP4 relays. The XPView main screen displays the text **DISABLED** in the appropriate section of the main screen pertaining to alarms. The color of the relay boxes representing relay status will change to blue.

Cancel button
This button discards any changes and closes the dialog box.

Help button
This button invokes the alarm/relay related on-line help utility.

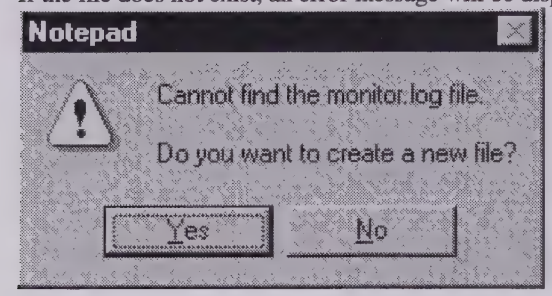
4.5.5.2 Alarms Menu: File Configuration

Select this menu item to display the alarm configuration of the currently opened file. If there is no file opened, then this menu item is disabled.

Configuration of alarms & relays is identical to that described in section 4.5.5.1.
All the relay & alarm status indication boxes will appear as a blue color.
No option to activate relays is possible.

4.5.5.3 Alarms menu: View Monitor Log

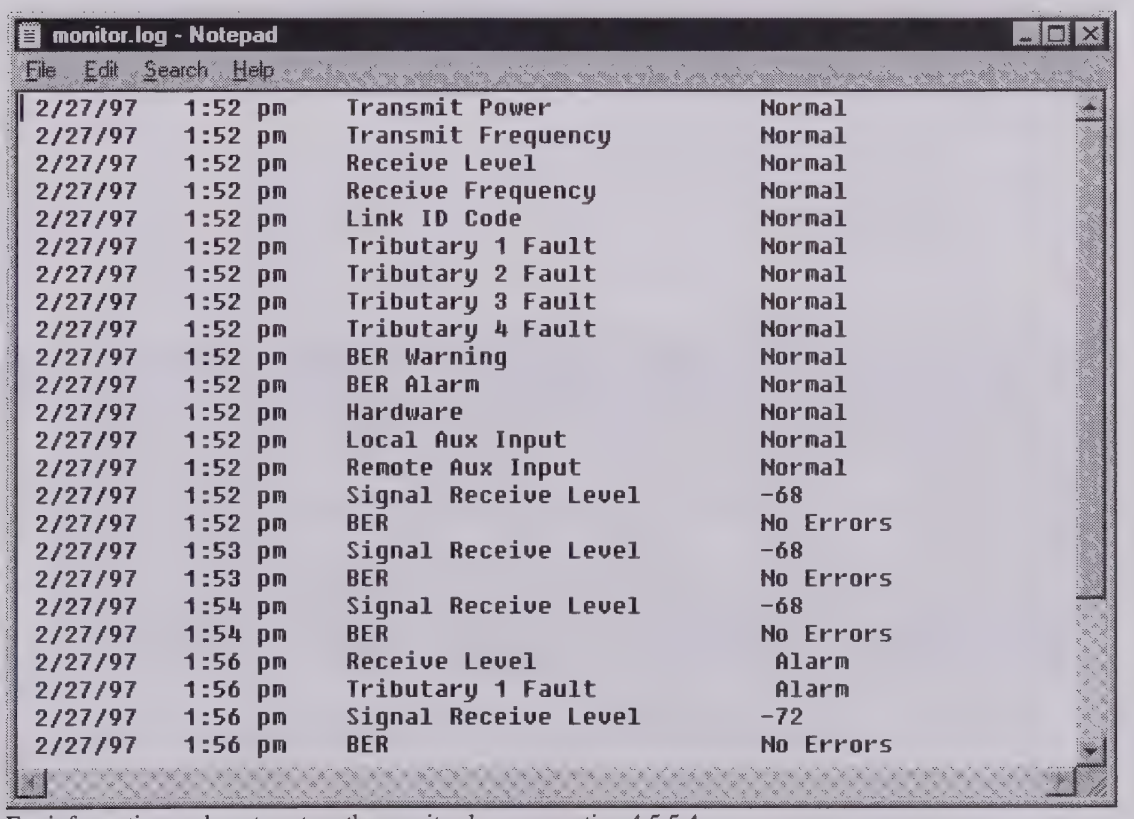
The user must be logged in either as level 2 or level 3 to access this menu item.
Select this menu item to view the monitor log file using the MS-Windows Notepad™ program. If the monitor log is large, it may be necessary to use another word processor to view the file, e.g. MS-Word.
If the file does not exist, an error message will be displayed:



Shortcut
Keys: CTRL+F2

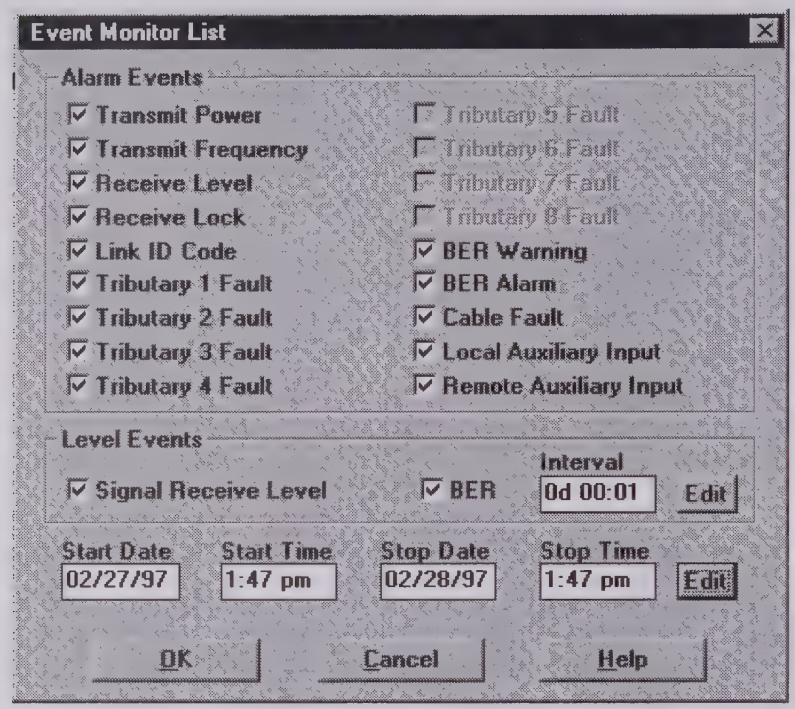
The Notepad program will open the **c:\xpview\monitor.log** file. Using Notepad the user may perform the following common tasks:

- Print the file by choosing menu item **Print** from the **File** menu (ALT + F, P).
- Save the file with a different name by choosing menu item **Save As** from the **File** menu (ALT + F, A).
- Exit the Notepad program by choosing menu item **Exit** from the **File** menu (ALT + F, X).


monitor.log - Notepad
File Edit Search Help
2/27/97 1:52 pm Transmit Power Normal
2/27/97 1:52 pm Transmit Frequency Normal
2/27/97 1:52 pm Receive Level Normal
2/27/97 1:52 pm Receive Frequency Normal
2/27/97 1:52 pm Link ID Code Normal
2/27/97 1:52 pm Tributary 1 Fault Normal
2/27/97 1:52 pm Tributary 2 Fault Normal
2/27/97 1:52 pm Tributary 3 Fault Normal
2/27/97 1:52 pm Tributary 4 Fault Normal
2/27/97 1:52 pm BER Warning Normal
2/27/97 1:52 pm BER Alarm Normal
2/27/97 1:52 pm Hardware Normal
2/27/97 1:52 pm Local Aux Input Normal
2/27/97 1:52 pm Remote Aux Input Normal
2/27/97 1:52 pm Signal Receive Level -68
2/27/97 1:52 pm BER No Errors
2/27/97 1:53 pm Signal Receive Level -68
2/27/97 1:53 pm BER No Errors
2/27/97 1:54 pm Signal Receive Level -68
2/27/97 1:54 pm BER No Errors
2/27/97 1:56 pm Receive Level Alarm
2/27/97 1:56 pm Tributary 1 Fault Alarm
2/27/97 1:56 pm Signal Receive Level -72
2/27/97 1:56 pm BER No Errors

For information on how to set up the monitor log, see section 4.5.5.4.
For an overview of the monitor log features, see section 4.5.5.

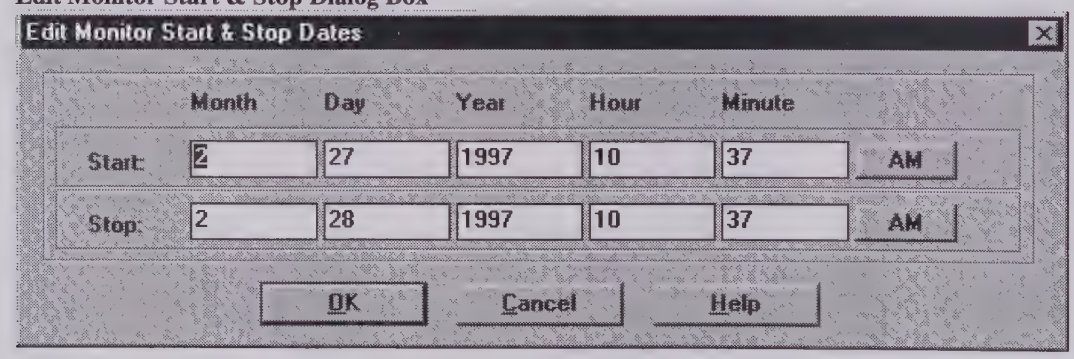
4.5.5.4 Alarms menu: Edit Monitor List



Use this command to set up a monitoring session for the local XP4 or display the list of events for a monitoring session. The PC running XPView must remain attached to the XP4 and logged in as level 2 or level 3 to monitor the system.
For an overview of the monitor log features, see section 4.5.5.

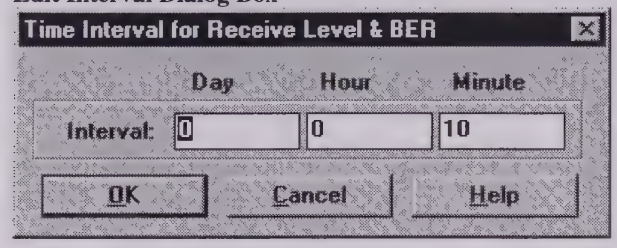
Shortcuts
Keys: CTRL+F3

Edit Monitor Start & Stop Dialog Box



This dialog box allows the user to change the monitoring period (the dates and times to begin and end monitoring). The default monitoring period is 24 hours from the time the user selects the **Edit Monitor List** menu item.

Edit Interval Dialog Box



This dialog box allows the user to edit the time interval between which XPView monitors Level Events (i.e. Signal Receive Level and BER). Unlike Alarm Events, which are monitored every minute, Level Events can be monitored at any time interval. Intervals as small as one minute or as large as one month can be selected. The Level Events will be monitored at the interval the user selects.

How to set up a monitor session

The PC running XPView must remain connected to the XP4 and the user must be logged in either as level 2 or level 3 access to record a monitor session. The XP4 does not save monitor log information.

1. Select the menu item **Edit Monitor List** from the **Alarms** menu.
2. Check the boxes next to the **Alarm Events** to monitor.
3. Check the boxes next to the **Level Events** to monitor.
4. Click on the **Edit** button to edit the time interval for Level Events. Enter the number of days, hours or minutes between monitoring of Level Events.
5. Click on the **Edit** button next to Stop Time to change the monitor dates and times. Enter a start date and time and a stop date and time.
6. Choose **OK**. The following message will display: "***Would you like to enable monitoring?***"
7. Choose
    - **Yes** to return to XPView and start the monitoring session.
    - **No** to save the event monitor list and return to XPView without starting a monitor session. The user can select the **Edit Monitor List** menu item at a later time to bring up the saved list and enable monitoring.
    - **Cancel** to discard changes to the event monitor list and return to XPView (without starting a monitor session).

If a monitor session is in progress, the status bar shows it by displaying ***Monitor On*** instead of ***Monitor Off***.

If a monitor session is in progress & the user tries to exit XPView, the following message is displayed "***XPView is currently monitoring the attached IDU. Do you wish to end monitoring?***"
Choose

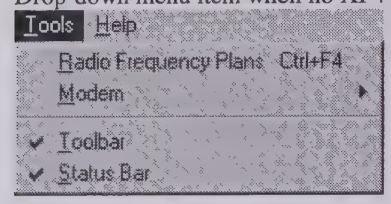
- **Yes** to end monitoring session & exit the XPView application.
- **No** to continue monitoring & remain in XPView.

Once a monitoring session is in progress, if the user tries to select **Edit Monitor List** menu item, then the following warning message is displayed "***This action will disable monitoring. Do you wish to continue?***"
Choose

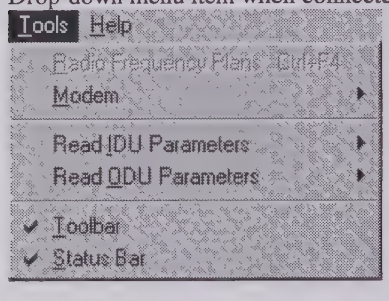
- **Yes** to stop the monitoring session & display the **Edit Monitor List** dialog box.
- **No** to continue monitoring.

4.5.6 Tools Menu Commands

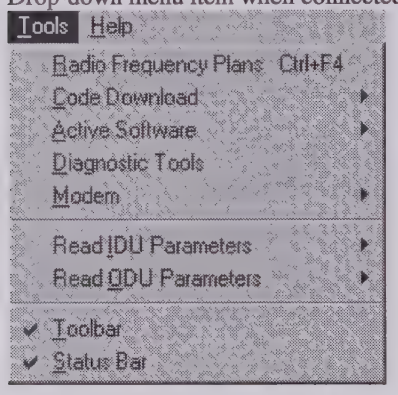
Drop-down menu item when no XP4 is connected to XPView.



Drop-down menu item when connected to XP4 with level 1 & level 2 access.



Drop-down menu item when connected to XP4 with level 3 access.



The following commands are available:

Radio Frequency Plans
Displays all the Radio Frequency Plans (RFPs) stored in the XP4 IDU. Also allows the user to change, add, and delete RFPs, read in a file of RFPs or save a file of RFPs.
Controls to display either channel number or frequency on the IDU front panel and ability to modify channel number with a letter or prime suffix is also available here. Refer to section 4.1.2.2.1 (Note on Channel Numbering) for more details.

Code Download menu item
Allows the user to download new IDU or ODU software.

Active Software menu item
Displays software versions in use & allows the user to switch between different versions of IDU or ODU software.

Diagnostic Tools
Allows the user to troubleshoot the radio using loopback features such as RF loopback, analog ODU loopback, digital ODU loopback, and IDU loopback. Other functions available are ability to turn modulation on & off, scrambling on & off, descrambling on & off, and the forward error correction on & off.

Modem

- **Hangup**
  Disconnects the modem to the remote XP4.
- **Dial Number**
  Dials up a remote XP4 using an attached modem.

Read IDU Parameters
Allows the user to view local or remote IDU parameters.

Read ODU Parameters
Allows the user to view local or remote ODU parameters.

Toolbar
Allows the user to display or hide the toolbar.

Status Bar
Allows the user to display or hide the status bar.

4.5.6.1 Tools menu: Radio Frequency Plans

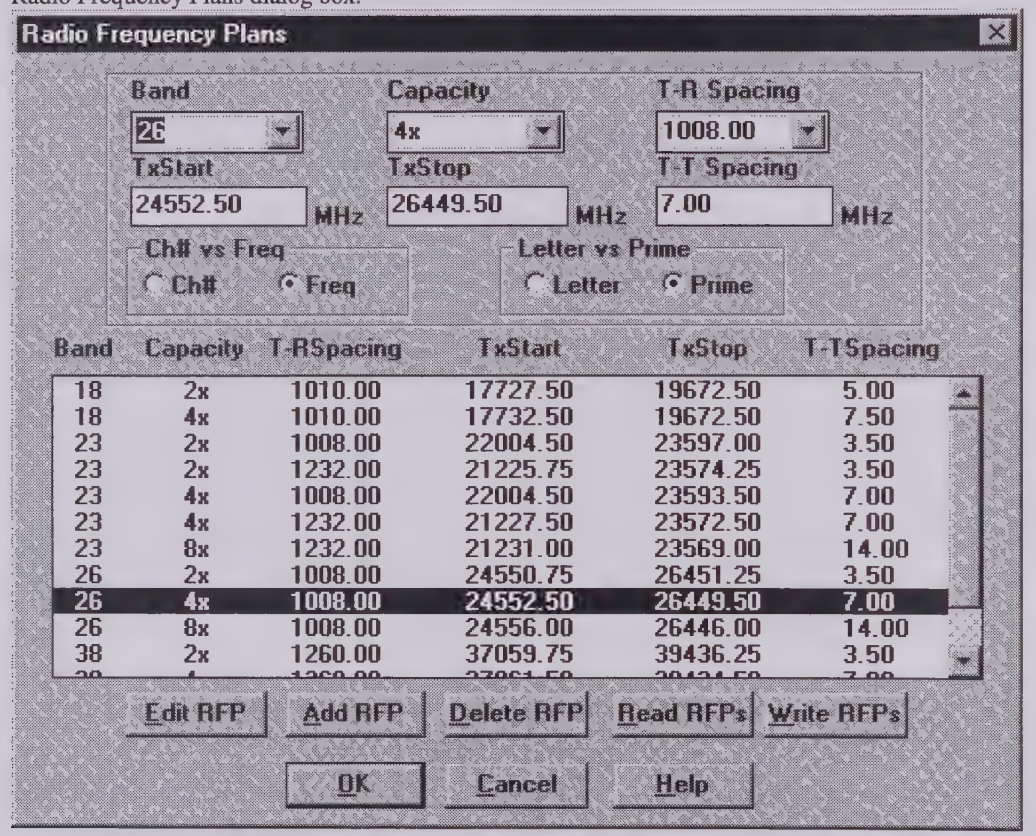
This command allows the user to modify a Radio Frequency Plan (RFP). Once XPView displays the RFPs, the user can add, delete and change RFPs, save them to a file, and read in a file of RFPs. An RFP must follow the rules outlined below. If they are not adhered to, suitable error messages are provided by XPView.

1. the TT Spacing value must divide evenly into the difference between the Tx Stop Frequency and the Tx Start Frequency;
2. the T-R Spacing must be between 100-1500 MHz and it must be an integer multiple of the T-T Spacing.
3. the Tx Start Frequency cannot be greater than the Tx Stop Frequency.

Shortcut

Keys: CTRL+F4

Radio Frequency Plans dialog box.



Dialog box options

The following options allow the user to configure RFPs:

Band

Enter the RF band (13, 15, 18, 23, 26, 38) or select one from the drop-down list.

Capacity

Enter the capacity (2x, 4x, 8x) or select one from the drop-down list.

T-R Spacing

Enter the T-R (transmit-receive duplex) Spacing or select a value from the list. The T-R Spacing must be between 100 – 1500 MHz and it must be an integer multiple of the T-T Spacing.

TxStart
Enter the Tx Start frequency. This will be the center frequency of channel #1 in the frequency plan to be generated.

TxStop
Enter the Tx Stop frequency. This will be the center frequency of the last channel in the frequency plan to be generated.

T-T Spacing
Enter the T-T (channel) Spacing. The T-T spacing must be a number that divides evenly into the difference between the Tx Start and Tx Stop frequencies.

Ch# Vs Freq
Select whether the user requires channel number or transmitter frequency (in MHz) to be displayed on the IDU front panel.

Letter Vs Prime
Select whether the user requires a channel plan letter indicator (C, D, E or F - per UK DTI channel plan designations) or a prime (indicating high band transmitter) to follow the channel number if displayed on the IDU front panel.

Edit RFP
Permits editing of the RFP highlighted in the dialog box's main window.

Add RFP
Adds the RFP defined in the **Band**, **Capacity**, **T-R Spacing**, **TxStart**, **TXStop** & **T-T Spacing** fields at the top of the dialog box to the list of RFPs in the dialog box's main window.

Delete RFP
Deletes the selected RFP that is highlighted in the dialog box's main window.

Read RFPs
Opens RFPs from the XPView host PCs hard-disk-drive. RFP files are designated by a **.RFP** filename extension.

Write RFP
Saves the currently displayed RFP to the XPView host PCs hard-disk-drive. RFP files are designated by a **.RFP** filename extension.

OK
Closes the RFP dialog box & writes any RFP changes into the XP4 IDU.

Cancel
Closes the RFP dialog box & does not write any RFP changes into the XP4 IDU.

Help
Starts on-line help utility with RFP related help as the subject matter.

4.5.6.1.1 Editing a Radio Frequency Plan

The menu item **Radio Frequency Plans** is accessible from the **Tools** menu at level 3 access only.

1. From the **Tools** menu, select the menu item **Radio Frequency Plans**.
2. With the mouse, double click on the RFP record in the list which needs to be edited. Upon double-clicking, the appropriate fields such as **Band**, **Capacity**, **T-R Spacing**, **Tx Start**, **Tx Stop** & **T-T Spacing** will be updated with the entries from the RFP record in the list.
3. Change the appropriate fields as desired.
4. Check the **Edit RFP** button to change the highlighted RFP record in the list.
5. Choose **OK** to close the dialog box & write the new set of RFP's to the IDU.
6. Choose **Cancel** to discard any changes made to the RFP.

4.5.6.1.2 Adding a Radio Frequency Plan

The menu item **Radio Frequency Plans** is accessible from the **Tools** menu at level 3 access only.

1. From the **Tools** menu, select the menu item **Radio Frequency Plans.**
2. Enter the RF **Band** (13, 15, 18, 23, 26, 38) or select a band from the list.
3. Enter the **Capacity** (2x, 4x, 8x) or select a capacity from the list.
4. Enter the **T-R Spacing** or select a value from the list. The T-R Spacing must be between 100 – 1500 MHz and it must be an integer multiple of the **T-T Spacing**.
5. Enter the **Tx Start** frequency. Use the following guidelines for the **Tx Start** and **Tx Stop** fields.

Band (GHz)	Start Frequency (MHz)	Stop Frequency (MHz)
18	≥ 17332.5	≤ 19672.5
23	≥ 21200	≤ 23600
26	≥ 24500	≤ 26500
38 (European)	≥ 37000	≤ 39500
38 (North American)	≥ 37000	≤ 40000

6. Enter the **Tx Stop** frequency.
7. Enter the **T-T Spacing**. The T-T spacing must be a number that divides evenly into the difference between the start and end frequencies. For example, if the start frequency was 21,200 MHz and the end frequency was 22,400, subtract the start frequency from the end frequency. The difference is 1,200; therefore, the T-T Spacing must be a number that divides evenly into the number 1,200.
8. Choose **Add RFP** or press **ALT+A.** The RFP will be added to the list.
9. Choose **OK** to close the dialog box and write the new set of RFPs to the IDU. If **Cancel** is selected the RFP set will not be written to the IDU.

4.5.6.1.3 Deleting a Radio Frequency Plan

The menu item **Radio Frequency Plans** is accessible from the **Tools** menu at level 3 access only.

1. From the **Tools** menu, select the menu item **Radio Frequency Plans.**
2. Find the RFP to delete using the scrolling bar at the side of the RFP dialog box's main window. Select the RFP by highlighting it.
3. Choose **Delete RFP** or press **ALT+D.** The RFP will be deleted from the list.
4. Choose **OK** to close the dialog box and write the new set of RFPs to the IDU. If **Cancel** is selected the RFP set will not be written to the IDU..

4.5.6.1.4 Saving a file of Radio Frequency Plans

The menu item **Radio Frequency Plans** is accessible from the **Tools** menu at level 3 access only.
A file of Radio Frequency Plans (RFPs) must be saved to the XPView host PCs hard-disk-drive with the **.RFP** extension to open and view it using XPView.

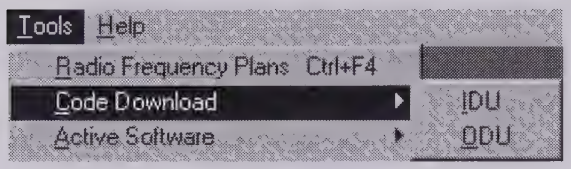
1. From the **Tools** menu, select the menu item **Radio Frequency Plans.**
2. Add, delete or edit RFPs as necessary.
3. Choose **Write RFPs** or **ALT+W.** The Write RFP File dialog box will display.
4. Type a filename and choose **OK.** The file will be saved with the .RFP filename extension.

4.5.6.1.5 Opening a file of Radio Frequency Plans

The menu item **Radio Frequency Plans** is accessible from the **Tools** menu at level 3 access only.
A file of RFPs may be opened from XPView. RFP files are stored on the XPView host PCs hard-disk-drive with the **.RFP** extensions.

1. From the **Tools** menu, select **Radio Frequency Plans.**
2. Select **Read RFPs** or press **ALT+R.** The Read RFP file dialog box will display.
3. Choose the RFP file to load into XPView. The file must have the .RFP extension.
4. Choose **OK**.
5. XPView will load the file. Several duplicate plans may be seen on the screen. Choose **OK** to close the dialog box. XPView will delete the duplicates after the dialog box is closed.

4.5.6.2 Tools menu: Code Download



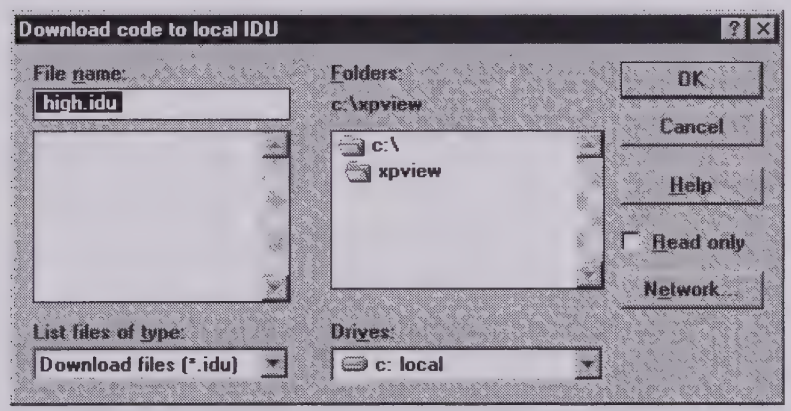
The **IDU** command from the **Code Download** menu item on the **Tools** menu allows the user to download software to an IDU. The **ODU** command from the **Code Download** menu item on the **Tools** menu allows the user to download software to an ODU. The user can download two software versions to both IDU & ODU. One version occupies the low memory section while the other version occupies the high memory section.

Having two images of code available for each IDU & ODU permits new code to be loaded, tested & verified. If an undesirable feature is found to be associated with the new code, then the user can switch back to using the previous version (see section 4.5.6.2 for further details on switching the active code).

The user can download a new software version (interchangeably called code) to the local or remote IDU and ODU through XPView. To download code to the local or remote radio, select the appropriate local or remote screen by selecting **Local** or **Remote** menu items from the **View** menu.
All files will be provided on diskette from Innova if field upgrades become necessary.

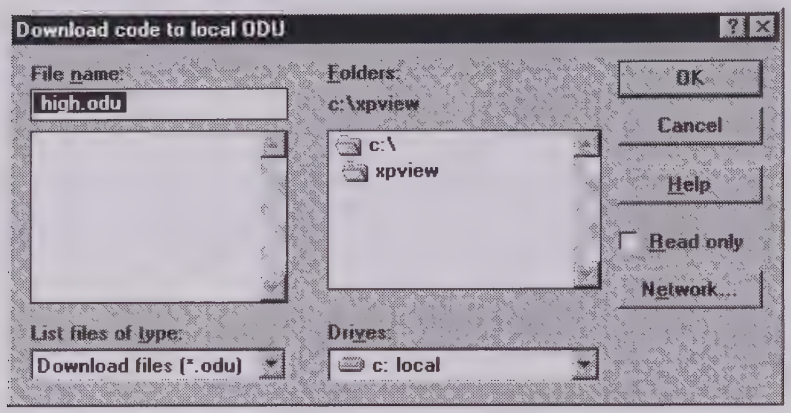
Code download procedure:

1. XPView will automatically detect the inactive memory location & select this as the location to load the new code.
   Download code to the IDU by selecting the menu item **IDU** from the menu item **Code Download** in the **Tools** menu. A file dialog will be displayed.

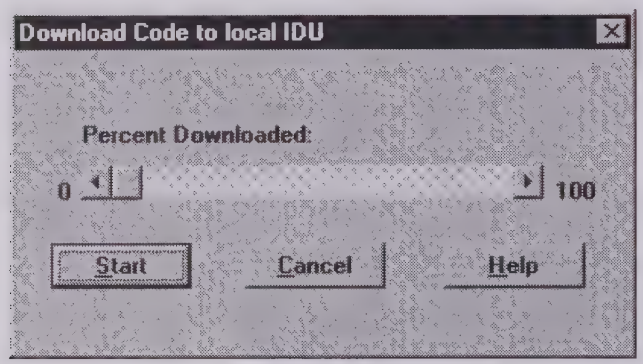


   Select the drive & directory that contains the code to be downloaded. The file will be displayed in the **File Name** box. Choose **OK** and the download-in-progress dialog will be displayed.

To download code to the ODU select the menu item **ODU** from the menu item **Code Download** in the **Tools** menu.



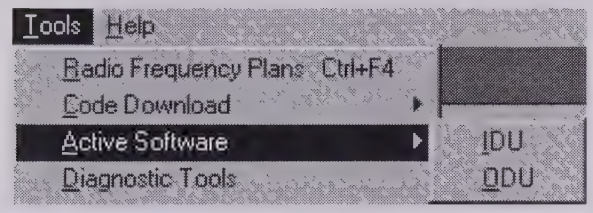
Select the drive & directory that contains the code to be downloaded. The file will be displayed in the **File Name** box. Choose **OK** and the download-in-progress dialog will be displayed.



2. Select among the following actions:
   - Select **Start** to download code to the IDU or ODU.
   - Select **Cancel** to stop the code download operation to the IDU or ODU.

3. After the code has been successfully downloaded to the IDU or ODU, the following message is displayed, ***"Download is complete. Do you want to run the new version?"***. Select **Yes** to run the new version or **No** to continue running the old version. If the user does not respond within one minute then the IDU or ODU will continue running the old version. The new version of code will remain loaded into memory & may be invoked at any time later using the menu item **Active Software** under the **Tools** menu (see section 4.5.6.3 for further details).

4.5.6.3 Tools menu: Active Software

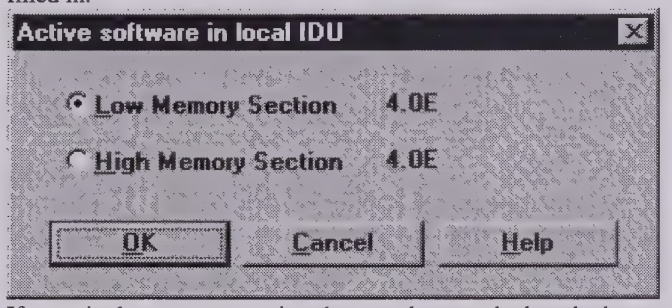


These commands are available with Level 3 access only.
The **IDU** command from the **Active Software** menu item on the **Tools** menu allows the user to activate one of the two software versions stored in the IDU memory. The **ODU** command allows the user to activate one of the two software versions stored in the ODU memory. The user can make a particular software version active only if it was downloaded to the memory in the first place.

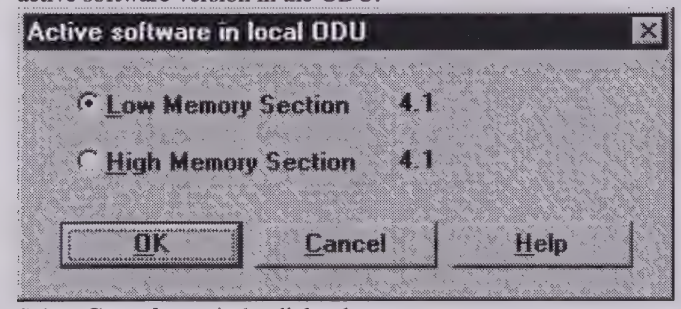
The user can also use this function to determine the version of the software (interchangeably called code) currently active in the IDU or ODU.

To determine the software version currently active in the IDU or ODU follow these steps.

1. Select the menu item **IDU** from the menu item **Active Software** under the **Tools** menu to display the active software version in the IDU. A dialog box will appear which displays the software version loaded in the low and high memory sections. The active software version will have its corresponding button filled in.



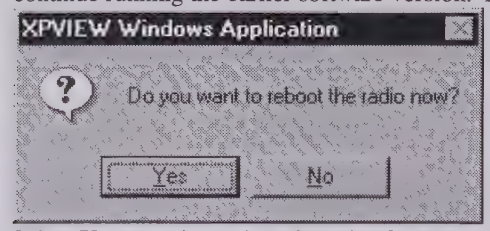
If a particular memory section does not have code than the button will be disabled and the text ***none*** will be displayed next to it.
Select **Cancel** to exit the dialog box.
Select the menu item **ODU** from the menu item **Active Software** under the **Tools** menu to display the active software version in the ODU.



Select **Cancel** to exit the dialog box.

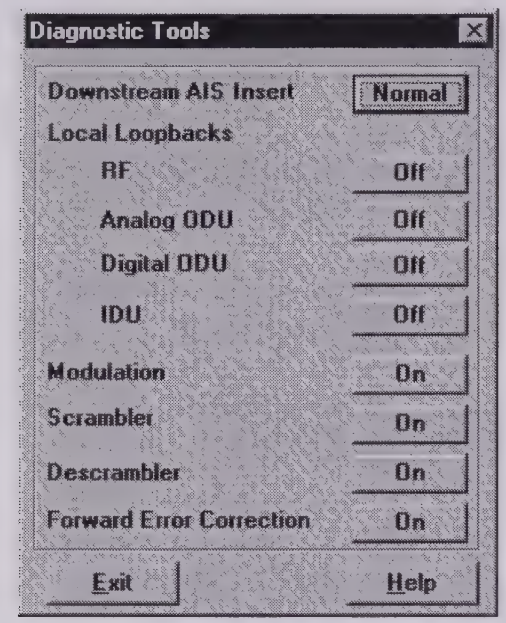
To make a particular software version active in the IDU or ODU follow these steps.

1. Complete step one outlined above.
2. Select the software version to activate by clicking in the radio button corresponding to that software version. Select **OK** to activate the software version or **Cancel** to not activate the software version and continue running the earlier software version. If **OK** is selected than the following message is displayed:



3. Select **Yes** to activate the selected software version or **No** to not activate the software version and continue running the earlier software version.

4.5.6.4 Tools menu: Diagnostic Tools



Note that the **Diagnostic Tools** menu item is only available when viewing the local XP4. The menu option is grayed out when viewing the remote XP4.

The diagnostic tools offered have the potential to affect all link traffic.

The **Diagnostic Tools** dialog box allows the user to troubleshoot the radio using loopbacks such as RF loopback, analog ODU loopback, digital ODU loopback, and IDU loopback. Other functions available are ability to turn either ON or OFF modulation, scrambler, descrambler, and the forward error correction. Each tool is actioned immediately when the relevant button is selected, no "writing of data" to the XP4 is required.

Dialog box options:
The following tools are available for use:
Downstream AIS Insert

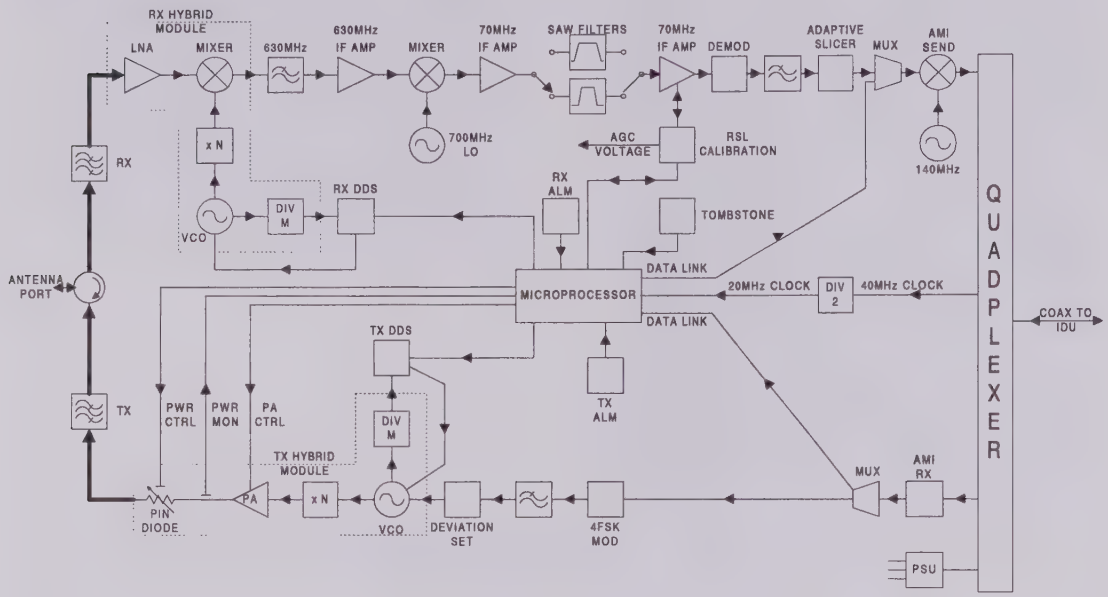
Ability to turn AIS Insert function **Off** or **Normal**. **Normal** allows AIS insertion upon either frame loss or BER conditions as described in section 4.1.4.1.

Local Loopbacks:

RF

The transmit frequency of local ODU is changed to transmit to its own receiver at maximum power. The transmitter of remote ODU is muted to prevent interference.

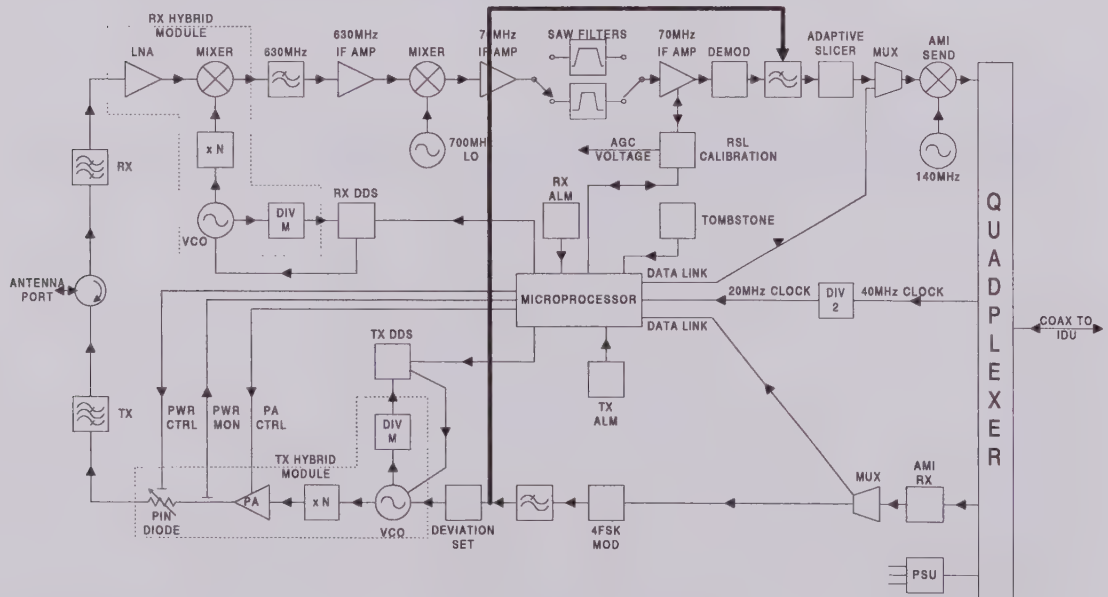
The diagram below shows the main signal path in RF loopback mode.



Analog ODU

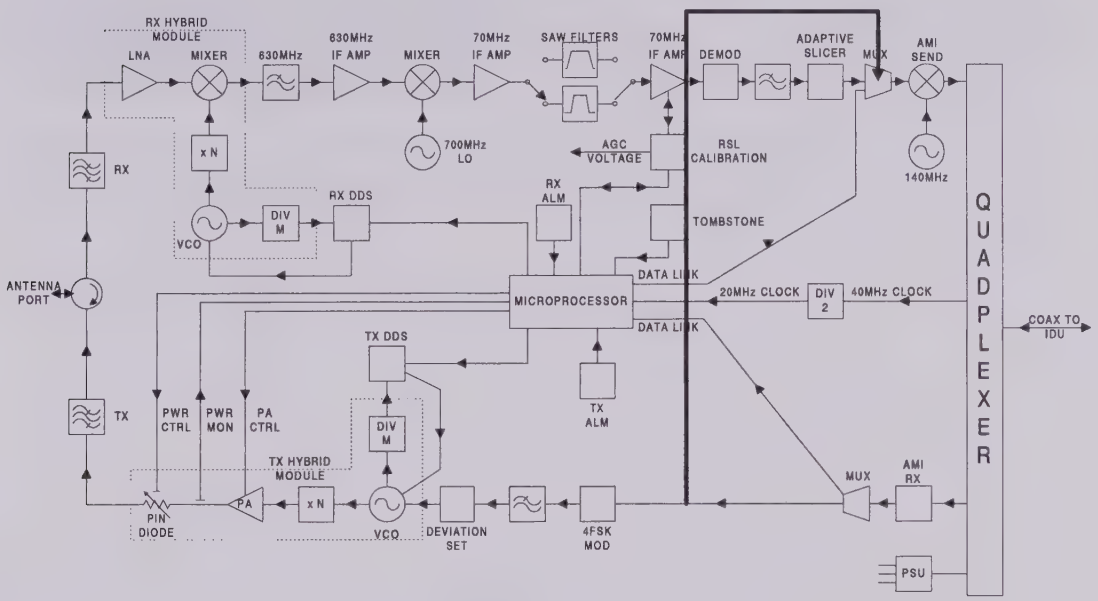
Loopback complete data stream in the local ODU after four level baseband is generated & filtered for input to the transmit hybrid. This includes the entire baseband path, except for transmitter and receiver RF modules.

The diagram below shows the main signal path in Analog ODU loopback mode.



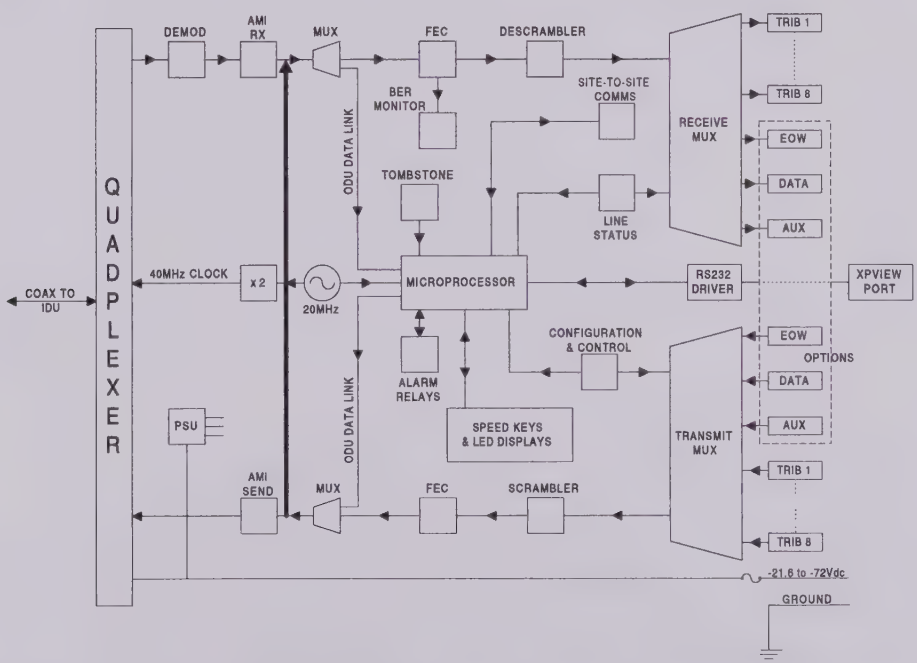
Digital ODU

Loopback complete data channel up to the ODU signal processor board. The data stream is looped-back after the FPGA (field programmable gate array) extracts the messages from the IDU in the transmit direction and before the insertion of ODU messages down to the IDU in the receive direction.
The diagram below shows the main signal path in Digital ODU loopback mode.



IDU

Loopback complete data channel going to outdoor unit. All tributary inputs are multiplexed and de-multiplexed and then returned to the tributary outputs.
The diagram below shows the main signal path in IDU loopback mode.



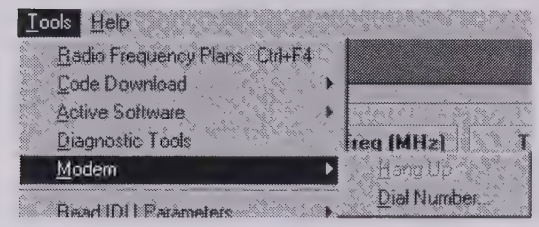
Modulation
Turns on or off the modulation on the microwave carrier.

Scrambler
Turns on or off the scrambler function on multiplex data transmitted over the radio link.

Descrambler
Turns on or off the descrambler function on multiplex data received over the radio link.

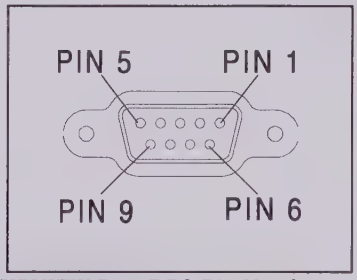
Forward Error Correction
Turns on or off the forward error correction on the local receiver.

4.5.6.5 Tools menu: Modem



An external modem can be connected to the XP4 IDU XPVIEW port instead of a PC. With the modem connection, XPView can communicate with a XP4 without need for co-location. The modem at the XP4 location must be compatible with the external modem where XPView resides and needs to be set up for auto-answer mode.

The pinout of the XPIEW port is detailed below:



XPVIEW Port DB9 Pin Numbering.

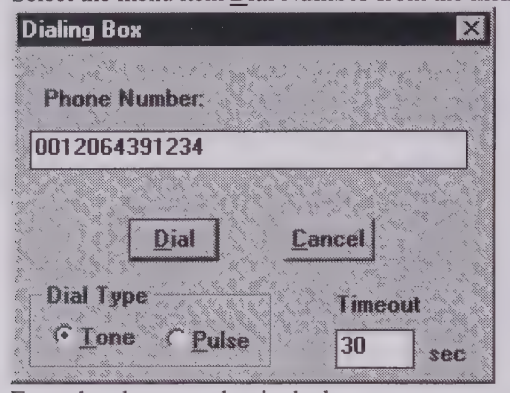
Pin No.	Signal Name	Signal Description
1	-	
2	RX	Receive Data Signal (I/P)
3	TX	Transmit Data Signal (O/P)
4	-	
5	GND	Ground
6	-	
7	-	
8	-	
9	-	

XPVIEW Port DB9 Pinout.

To communicate with the XPVIEW port, the modem must be set up for 9600bps data speed, 8 data bits, 1 stop bit & no parity.

To connect via a modem from XPView:

1. Select the menu item **Dial Number** from the menu item **Modem** under the **Tools** menu.



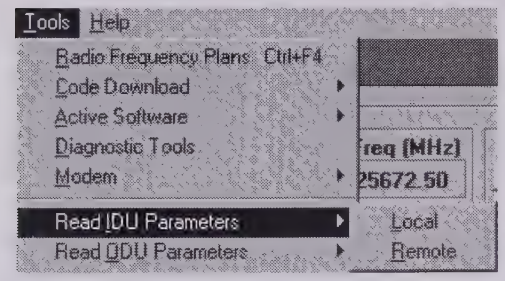
2. Enter the phone number in the box.
3. Change the Dial Type. Click on **Tone** or **Pulse**. The default is **Tone.**
4. Click in the box to change the **Time-Out** (if necessary). The default is **30 seconds.**
5. Click on the **Dial** button.
6. A status box shows the dialing progress. The IDU on the other end can be accessed after the message "***Connect 9600***".

Note. Communication response times are much slower while using a modem.

To disconnect from the modem:

Select **Hang Up** from the menu item **Modem** under the **Tools** menu. It may take up to 6 seconds to disconnect.

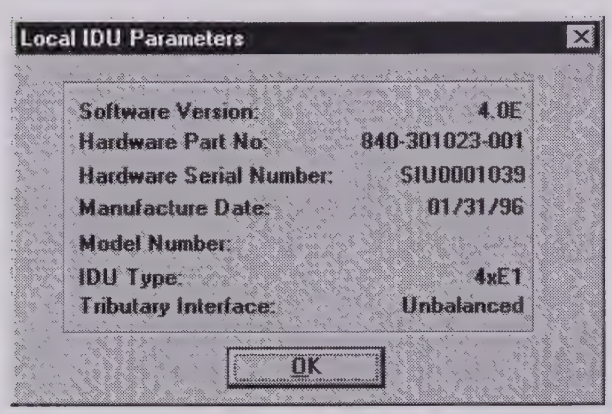
4.5.6.6 Tools menu: Read IDU Parameters



Use this command to view the information about the IDU for the local or remote sites. IDU Parameters include:

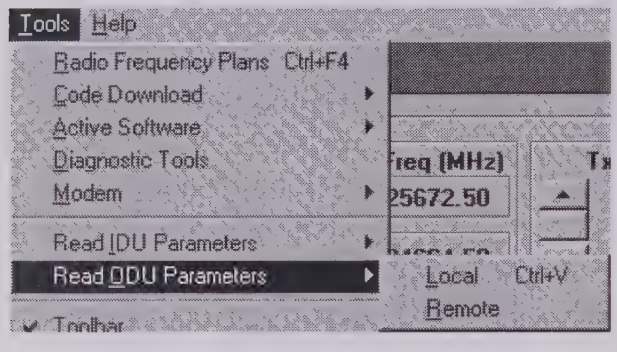
Software Version
Hardware Part Number
Hardware Serial Number
Manufacture Date
Model Number
IDU Type
Tributary Interface

IDU Parameters cannot be changed.



Exit the dialog box by selecting **OK**.

4.5.6.7 Tools menu: Read ODU Parameters



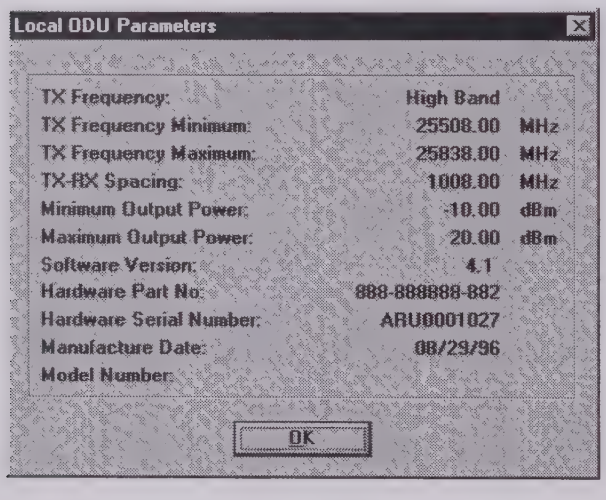
This command allows the user to view ODU information for the local or remote sites. ODU Parameters include:

- Tx Frequency
- Tx Frequency Minimum
- Tx Frequency Maximum
- T-R Spacing
- Minimum Output Power
- Maximum Output Power
- Software Version
- Hardware Part Number
- Hardware Serial Number
- Manufacture Date
- Model Number

Shortcut

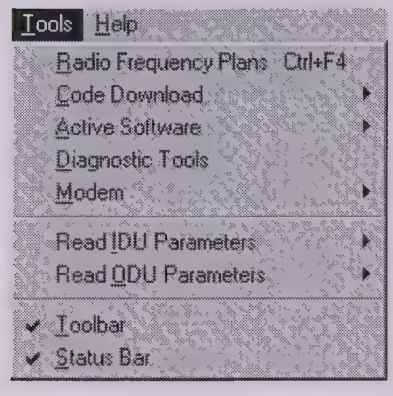
Keys: CTRL+V for local ODU

ODU Parameters cannot be changed.



Exit the dialog box by selecting **OK**.

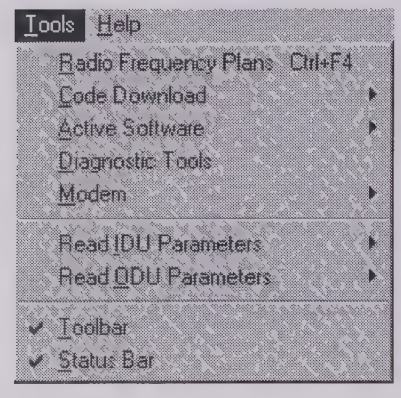
4.5.6.8 Tools menu: Toolbar



Use this command to display and hide the Toolbar. A check mark (✓) appears next to **Toolbar** on the **Tools** menu when the Toolbar is displayed.

For more information on the Toolbar, see section 4.3.

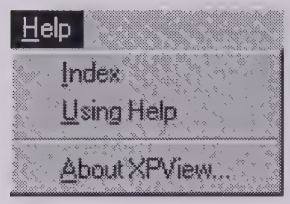
4.5.6.9 Tools menu: Status Bar



Use this command to display and hide the Status Bar. A check mark (✓) appears next to **Status Bar** on the **Tools** menu when the Status Bar is displayed.

For more information on the Status Bar, see section 4.4.

4.5.7 Help Menu Commands



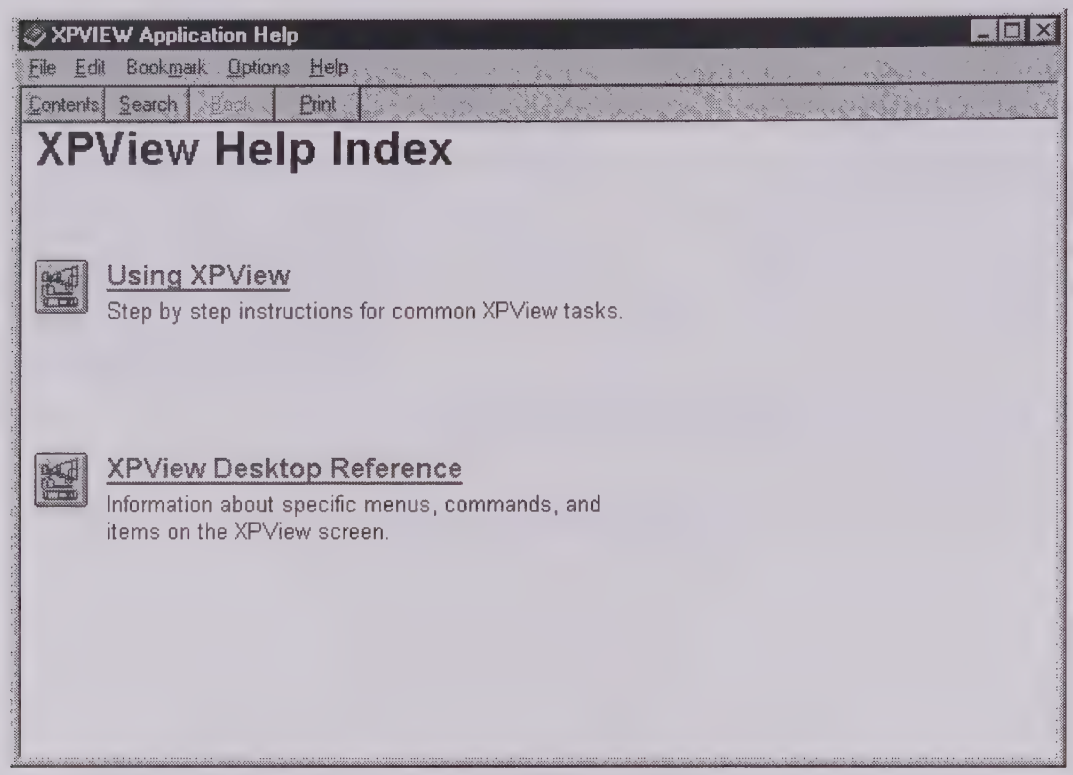
The following commands are available:

Index
Displays an index of XPView help topics

Using Help
Provides general instructions on using Windows help

About XPView
Displays information about the XPView program

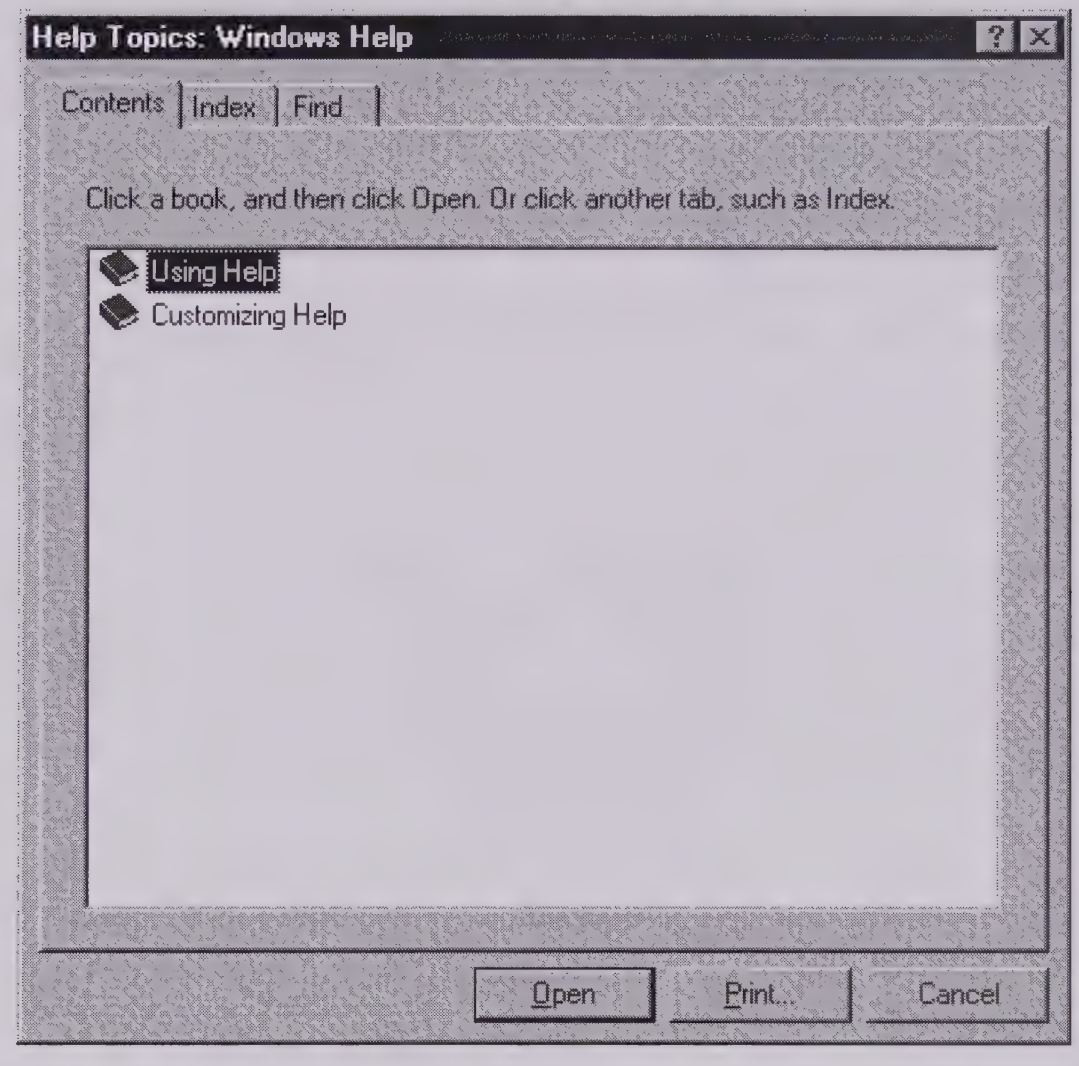
4.5.7.1 Help menu: Index


XPVIEW Application Help
File Edit Bookmark Options Help
Contents Search Back Print
XPView Help Index
Using XPView
Step by step instructions for common XPView tasks.
XPView Desktop Reference
Information about specific menus, commands, and items on the XPView screen.

Use this command to display the index of Help topics. From the index screen, the user can click on a topic to get help or search for a particular help topic.

Click the Contents button at any time to return to the index screen.

4.5.7.2 Help menu: Using Help



Use this command to get instructions for using Help. The Microsoft Windows How to Use Help guide will be displayed.

4.5.7.3 Help menu: About XPView

Use this command to display information about the XPView program, including version number and copyright.

Section 5

5. Appendices

5.1 Sample Configuration Reports

5.1.1 System Report

```
                                                          , 4xE1
                                                 January 31, 1997
                                                         8:55 am


                        LOCAL SYSTEM REPORT

CONFIGURATION LOCAL END:                                 Low Band


LOCAL IDU

Transmitter Start Frequency:                    22004.50  MHz
Transmitter Stop Frequency:                     23593.50  MHz
TX-TX Spacing:                                      7.00  MHz
Transmit Frequency:                             23152.50  MHz
Receive Frequency:                              24160.50  MHz
Transmit Power:                                    19.00  dBm
Link ID:                                               1
Site Name:                                          test
Corporate Name:                                   innova
Transmitter Mute:                                    Off
FEC Enable:                                          Off
AIS Insert:                                           On

Software Part Number:                                t4.1a
Ordering Number:                          840-301023-002
Hardware Serial Number:                      SIU0001163
Manufacturing Date:                             12/06/96
Model Number:
Customer Interface:                              Balanced

Tributary     1       2       3       4
Data Input:   Normal  Normal  Normal  Normal
Service:      Active  Active  Active  Active
Encoding:     HDB3    HDB3    HDB3    HDB3


LOCAL ODU

Transmit Frequency - Minimum:                   23008.00  MHz
Transmit Frequency - Maximum:                   23308.00  MHz
TX-RX Spacing:                                   1008.00  MHz
Minimum Output Power:                             -12.50  dBm
Maximum Output Power:                              22.00  dBm
Software Part Number:                                4.2
Ordering Number:                          840-201234-012
Hardware Serial Number:                      ARU0001149
Manufacturing Date:                             09/13/96
Model Number:
```

, 4xE1
January 31, 1997
8:55 am

REMOTE SYSTEM REPORT

CONFIGURATION REMOTE END:	Low Band	
REMOTE IDU		
Transmitter Start Frequency:	22004.50	MHz
Transmitter Stop Frequency:	23593.50	MHz
TX-TX Spacing:	7.00	MHz
Transmit Frequency:	22144.50	MHz
Receive Frequency:	23152.50	MHz
Transmit Power:	19.00	dBm
Link ID:	1	
Site Name:		
Corporate Name:		
Transmitter Mute:	Off	
FEC Enable:	Off	
AIS Insert:	Off	
Software Part Number:	t4.1a	
Ordering Number:	840-301023-002	
Hardware Serial Number:	SIU0001163	
Manufacturing Date:	12/06/96	
Model Number:		
Customer Interface:	Balanced	

Tributary	1	2	3	4
Data Input:	Normal	Normal	Normal	Normal
Service:	Active	Active	Active	Active
Encoding:	HDB3	HDB3	HDB3	HDB3

REMOTE ODU		
Transmit Frequency - Minimum:	22000.00	MHz
Transmit Frequency - Maximum:	22300.00	MHz
TX-RX Spacing:	1008.00	MHz
Minimum Output Power:	-11.00	dBm
Maximum Output Power:	19.00	dBm
Software Part Number:	4.2	
Ordering Number:	840-201234-011	
Hardware Serial Number:	ARU0001148	
Manufacturing Date:	09/13/96	
Model Number:		

5.1.2 Alarm Configuration

, 4xE1
January 31, 1997
8:55 am

LOCAL ALARM CONFIGURATION

	1 TRIBS	2 TRANSMIT	3 RECEIVE	4 RSL	5 AUXINPUT	THRESHOLD
Transmit Power	Off	On	Off	Off	Off	
Transmit Frequency	Off	On	Off	Off	Off	
Receive Level	Off	Off	Off	On	Off	-70 dBm
Receive Frequency	Off	Off	On	Off	Off	
Link ID Code	Off	Off	On	Off	Off	
Tributary 1 Fault	On	Off	Off	Off	Off	
Tributary 2 Fault	On	Off	Off	Off	Off	
Tributary 3 Fault	On	Off	Off	Off	Off	
Tributary 4 Fault	On	Off	Off	Off	Off	
BER Warning	Off	Off	Off	Off	Off	1x10 E-6
BER Alarm	Off	Off	Off	Off	Off	1x10 E-3
Hardware	Off	On	On	Off	Off	
Local Aux Input	Off	Off	Off	Off	On	
Remote Aux Input	Off	Off	Off	Off	On	

, 4xE1
January 31, 1997
8:55 am

REMOTE ALARM CONFIGURATION

	1 TRIBS	2 TRANSMIT	3 RECEIVE	4 RSL	5 AUXINPUT	THRESHOLD
Transmit Power	Off	On	Off	Off	Off	
Transmit Frequency	Off	On	Off	Off	Off	
Receive Level	Off	Off	Off	On	Off	-70 dBm
Receive Frequency	Off	Off	On	Off	Off	
Link ID Code	Off	Off	On	Off	Off	
Tributary 1 Fault	On	Off	Off	Off	Off	
Tributary 2 Fault	On	Off	Off	Off	Off	
Tributary 3 Fault	On	Off	Off	Off	Off	
Tributary 4 Fault	On	Off	Off	Off	Off	
BER Warning	Off	Off	Off	Off	Off	1x10 E-6
BER Alarm	Off	Off	Off	Off	Off	1x10 E-3
Hardware	Off	On	On	Off	Off	
Local Aux Input	Off	Off	Off	Off	On	
Remote Aux Input	Off	Off	Off	Off	On	

5.1.3 Radio Frequency Plan

, 4xE1
January 31, 1997
8:55 am

LOCAL FREQUENCY PLANS

Band	Capacity	T-R Spacing	TxStart	TxStop	T-T Spacing
18	2x	1010.00	17727.50	19672.50	5.00
18	4x	1010.00	17732.50	19672.50	7.50
23	2x	1008.00	22004.50	23597.00	3.50
23	2x	1232.00	21225.75	23574.25	3.50
23	4x	1008.00	22004.50	23593.50	7.00
23	4x	1232.00	21227.50	23572.50	7.00
23	8x	1232.00	21231.00	23569.00	14.00
26	2x	1008.00	24550.75	26451.25	3.50
26	4x	1008.00	24552.50	26449.50	7.00
26	8x	1008.00	24556.00	26446.00	14.00
38	2x	1260.00	37059.75	39436.25	3.50
38	4x	1260.00	37061.50	39434.50	7.00
38	8x	1260.00	37065.00	39431.00	14.00

, 4xE1
January 31, 1997
8:55 am

REMOTE FREQUENCY PLANS

Band	Capacity	T-R Spacing	TxStart	TxStop	T-T Spacing
18	2x	1010.00	17727.50	19672.50	5.00
18	4x	1010.00	17732.50	19672.50	7.50
23	2x	1008.00	22004.50	23597.00	3.50
23	2x	1232.00	21225.75	23574.25	3.50
23	4x	1008.00	22004.50	23593.50	7.00
23	4x	1232.00	21227.50	23572.50	7.00
23	8x	1232.00	21231.00	23569.00	14.00
26	2x	1008.00	24550.75	26451.25	3.50
26	4x	1008.00	24552.50	26449.50	7.00
26	8x	1008.00	24556.00	26446.00	14.00
38	2x	1260.00	37059.75	39436.25	3.50
38	4x	1260.00	37061.50	39434.50	7.00
38	8x	1260.00	37065.00	39431.00	14.00

5.1.4 Terminal Configuration Blank Report

INNOVA XP4

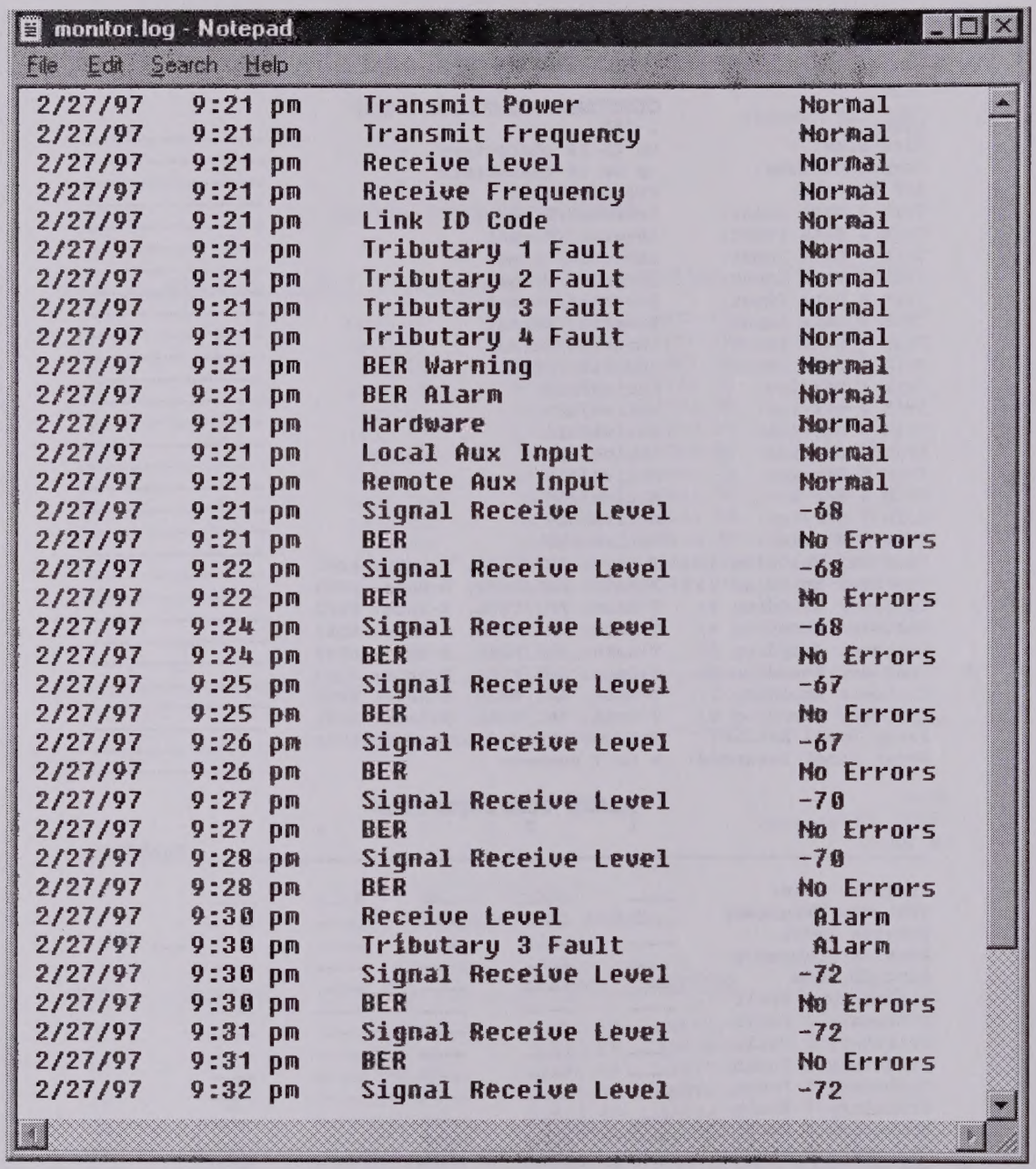
CUSTOMER CONFIGURATION

Link ID:	1-255	
Site Name:	up to 18 characters	
Corporate Name:	up to 18 characters	
AIS Insert:	Frame/BER/OFF	
Trib 1 Data Input:	Inverted/Normal	
Trib 2 Data Input:	Inverted/Normal	
Trib 3 Data Input:	Inverted/Normal	
Trib 4 Data Input:	Inverted/Normal	
Trib 5 Data Input:	Inverted/Normal	
Trib 6 Data Input:	Inverted/Normal	
Trib 7 Data Input:	Inverted/Normal	
Trib 8 Data Input:	Inverted/Normal	
Trib 1 Service:	Active/AIS	
Trib 2 Service:	Active/AIS	
Trib 3 Service:	Active/AIS	
Trib 4 Service:	Active/AIS	
Trib 5 Service:	Active/AIS	
Trib 6 Service:	Active/AIS	
Trib 7 Service:	Active/AIS	
Trib 8 Service:	Active/AIS	
Customer Encoding 1:	T-Rate: AMI/B8ZS, E-Rate: HDB3	
Customer Encoding 2:	T-Rate: AMI/B8ZS, E-Rate: HDB3	
Customer Encoding 3:	T-Rate: AMI/B8ZS, E-Rate: HDB3	
Customer Encoding 4:	T-Rate: AMI/B8ZS, E-Rate: HDB3	
Customer Encoding 5:	T-Rate: AMI/B8ZS, E-Rate: HDB3	
Customer Encoding 6:	T-Rate: AMI/B8ZS, E-Rate: HDB3	
Customer Encoding 7:	T-Rate: AMI/B8ZS, E-Rate: HDB3	
Customer Encoding 8:	T-Rate: AMI/B8ZS, E-Rate: HDB3	
Front Panel Access:	Password Needed/Locked/Neither	
Front Panel Password:	4 to 7 numbers	

ALARM CONFIGURATION

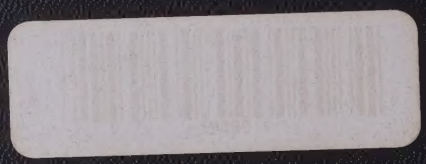
	1	2	3	4	5	THRESHOLD
Transmit Power						
Transmit Frequency						
Receive Level						dBm
Receive Frequency						
Link ID Code						
Tributary 1 Fault						
Tributary 2 Fault						
Tributary 3 Fault						
Tributary 4 Fault						
Tributary 5 Fault						
Tributary 6 Fault						
Tributary 7 Fault						
Tributary 8 Fault						
BER Warning						1x10 E
BER Alarm						1x10 E
Hardware						
Local Aux Input						
Remote Aux Input						

5.2 Sample Monitor Log Report


monitor.log - Notepad

File Edit Search Help

```
2/27/97   9:21 pm   Transmit Power          Normal
2/27/97   9:21 pm   Transmit Frequency      Normal
2/27/97   9:21 pm   Receive Level          Normal
2/27/97   9:21 pm   Receive Frequency      Normal
2/27/97   9:21 pm   Link ID Code           Normal
2/27/97   9:21 pm   Tributary 1 Fault      Normal
2/27/97   9:21 pm   Tributary 2 Fault      Normal
2/27/97   9:21 pm   Tributary 3 Fault      Normal
2/27/97   9:21 pm   Tributary 4 Fault      Normal
2/27/97   9:21 pm   BER Warning            Normal
2/27/97   9:21 pm   BER Alarm              Normal
2/27/97   9:21 pm   Hardware               Normal
2/27/97   9:21 pm   Local Aux Input        Normal
2/27/97   9:21 pm   Remote Aux Input       Normal
2/27/97   9:21 pm   Signal Receive Level   -68
2/27/97   9:21 pm   BER                    No Errors
2/27/97   9:22 pm   Signal Receive Level   -68
2/27/97   9:22 pm   BER                    No Errors
2/27/97   9:24 pm   Signal Receive Level   -68
2/27/97   9:24 pm   BER                    No Errors
2/27/97   9:25 pm   Signal Receive Level   -67
2/27/97   9:25 pm   BER                    No Errors
2/27/97   9:26 pm   Signal Receive Level   -67
2/27/97   9:26 pm   BER                    No Errors
2/27/97   9:27 pm   Signal Receive Level   -70
2/27/97   9:27 pm   BER                    No Errors
2/27/97   9:28 pm   Signal Receive Level   -70
2/27/97   9:28 pm   BER                    No Errors
2/27/97   9:30 pm   Receive Level           Alarm
2/27/97   9:30 pm   Tributary 3 Fault       Alarm
2/27/97   9:30 pm   Signal Receive Level   -72
2/27/97   9:30 pm   BER                    No Errors
2/27/97   9:31 pm   Signal Receive Level   -72
2/27/97   9:31 pm   BER                    No Errors
2/27/97   9:32 pm   Signal Receive Level   -72
```



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